

Export Diversification in Uganda: Developments in Non-Traditional Agricultural Exports

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Summary

In Uganda, non-traditional agricultural exports refer to agricultural, livestock and fisheries products that have been (re-)introduced as export commodities since Museveni came to power in 1986. The most important ones are flowers (mainly roses), fresh and frozen fish (Nile perch), fresh fruit and vegetables (cooking and apple bananas, hot pepper, chilli, okra, green beans, passion fruit and others), hides and skins (raw and wet blue), vanilla, sesame seed, and maize and beans. This paper considers the success of these commodities and the findings are summarised by evaluating the objectives of the Ugandan government with regard to the diversification of the country's agricultural exports.

Export earnings

Uganda's non-traditional agricultural exports are to be instrumental in restoring the country's balance of payments by increasing total export earnings and reducing fluctuations in revenues from exports (see Section 1.3). This objective has been partly realised. Non-traditional agricultural exports have increased Uganda's export earnings by US\$ 50 to 100 million a year (see Section 1.4). Over the last decade, the growth in non-traditional agricultural exports has been bigger than that of traditional agricultural exports. However, non-traditional agricultural exports have not replaced traditional agricultural exports. Most of Uganda's export revenue still comes from coffee.

Moreover, export earnings from non-traditional agricultural exports have fluctuated at least as much as those from traditional sources. As a result, non-traditional agricultural exports have so far not reduced fluctuations in export revenues.

Income and employment

Non-traditional agricultural exports are expected to provide income for (poor) rural households, either through production or employment. Large numbers of people have indeed benefited: peasant farmers who produce fruit, vegetables, maize, beans, vanilla and sesame seed, farm labourers who work on large-scale flower, vegetable and maize farms, fishermen who supply Nile perch, factory workers employed by hide and skin tanners, by fish processors and by vanilla curers, intermediate traders and purchasing agents who deliver to processors and exporters, the processors and exporters themselves, local and international transporters, input suppliers, government officials, and local and foreign consultants. The total number of beneficiaries is difficult to estimate but is probably between 20,000 and 50,000.

The activities are rewarding and generate badly needed additional income for the people involved. Peasant farmers and artisanal fishermen generally receive fair prices for their supplies. Declining prices are usually the result of international market developments. Farm labourers and factory workers receive fair wages, sometimes with attractive fringe benefits. Occupational health hazards are usually within prescribed limits. Safety measures do, however, differ from one employer to another as is seen in the flower industry where some farms have very high safety standards while others take their workers' safety less seriously (see Section 2.2).

Non-traditional agricultural exports offer income opportunities to men and women, and to poor and rich households. Commodities such as vanilla, mushrooms and okra give peasant women a degree of financial autonomy, while bird's eye chillies and vanilla provide income for poor peasant households without financial resources. The only actors who hardly benefit from their involvement in non-traditional agricultural exports are pastoralists. Rural butchers pay them a price per animal that relates to the meat but not to the hide or skin (see Section 5.2).

Non-traditional agricultural exports provide income and employment, but they are not the solution to poverty in rural Uganda. Ugandan coffee generates income and

employment for nearly five million people: more than 100 times as many people as are involved in non-traditional agricultural exports. Non-traditional agricultural exports do not have the same impact as coffee, and for the time being this will probably remain so.

Land use

In the eyes of the Ugandan government, diversification into non-traditional agricultural commodities should be based on efficient land use. Peasant farmers produce most non-traditional export crops and generally they use their land as efficiently for non-traditional crops as for traditional ones, and sometimes more so, e.g. planting vanilla in between coffee trees. The production of non-traditional export crops is integrated in their farming systems that are based on shifting cultivation, crop rotation and labour-intensive production methods. Labour, inputs and credit are bigger constraints on farmers than land.

A few crops are grown on a limited number of large-scale farms, notably vegetables, maize and flowers. Their production is more capital intensive but remains labour intensive. The land is usually as efficiently used as in small-scale production. In the case of flowers, the land is more efficiently used: the per-hectare returns on farm labour are clearly higher on a rose farm than on a smallholding that produces non-traditional export crops (see Section 2.3).

Large-scale farmers are demanding land in densely populated rural areas, e.g. Central Province. Their claims are, however, still limited and do not significantly affect the availability of land for smallholders. Tenants and other long-term occupants are well protected, even though corruption, manipulation and inefficiencies reduce the effectiveness of existing laws (see Section 2.3). Further growth of large-scale production may in the future cause conflicts over land, but the magnitude of these struggles should not be exaggerated. Land speculation will probably be a bigger threat as it leads to (temporary) under-utilisation of serviced land.

Environmental impact

Some non-traditional agricultural crops are produced with the use of only a few agrochemicals, while others require a wide range of such inputs. Vanilla destined for

export has to be grown without using any pesticides, while roses for export cannot be grown without them. The question is, however, not how many chemicals are used but whether these chemicals cause environmental problems such as soil and water pollution.

Flower farmers are generally aware of the dangers related to the use of agrochemicals. The most advanced have implemented sophisticated measures to make sure that traces of agrochemicals do not end up in the soil, surface or ground water. Less advanced flower producers are not aware of all the dangers involved or may not have the required capital to make the necessary investments (see Section 2.4). The flower sector is pro-active in monitoring environmental issues (see Section 2.5), but like any other sector it includes both trendsetters and laggards.

To the surprise of many, agrochemicals have become a major issue in the fishing industry. In the second half of the 1990s, artisanal fishermen, confronted with declining catches of tilapia, reverted to using chemicals to increase their catches. Mature Nile perch, the prime fish for export, was rarely caught this way but its exports were nevertheless affected. The EU banned imports from Uganda, together with those from Kenya and Tanzania, because of 'chemical fishing'. The Ugandan government reacted with a number of stringent measures, but it took a long time to convince the EU that the situation had improved. Meanwhile the impact on the fish exporting industry was dramatic (see Section 3.3). The ban on Ugandan fish lasted eighteen months, until August 2000, and demonstrated that Ugandan fish processor-exporters can improve their own standards, but that they remain vulnerable to domestic developments beyond their control.

Most non-traditional agricultural export commodities are exported without further processing except for fish, vanilla and hides and skins. Fish exporters have, over the years, improved their management of effluent water at processing plants (see Section 3.2). The processing of vanilla is carried out in a way which is environmentally friendly (see Section 6.4), with the only environmental constraint being the need for firewood. The processing of hides and skins is potentially harmful to the environment, as industrial tanning requires chemicals that can pollute rivers and lakes. In the past this did indeed happen, but the Ugandan government through the National Environmental Management Agency (NEMA) has become stricter and has even closed some of the tanneries that do not abide by regulations (see Section 5.4). The negative impact of hide and skin tanning on the environment has therefore declined but, at an earlier stage in the

marketing chain, the wet salting of hides is replacing air drying. This is a new environmental burden (see Section 5.3).

International competitive advantage

The Ugandan government is aiming at agricultural exports that are competitive in the long term. This relates to a number of issues that will be discussed under separate headings, starting with Uganda's present and future competitive advantage.

Uganda is able to produce a large range of non-traditional agricultural export commodities at competitive prices thanks to its favourable climate (which allows rainfed production for the greater part of the year), rich natural resources (especially Lake Victoria with its fish) and cheap rural labour. Producers have gained experience with delicate crops such as vanilla and roses which take time to become profitable (see Sections 2.1 and 6.5).

Low yields remain a problem especially in smallholder production. The reasons are a lack of labour (e.g. for weeding), and a lack of knowledge and scarcity of appropriate inputs such as seed and agrochemicals. The input market is not functioning well (see Section 4.4).

Uganda exports two types of non-traditional agricultural commodities in which it does not have a competitive advantage: bulky fresh produce (e.g. sweet potatoes), and maize and beans. The bulky fresh produce can only be exported without a loss because of fraudulent airway bills (see Section 4.4). The exports of maize and beans have been largely circumstantial, as they have resulted from wars and droughts in neighbouring countries and are handled by the World Food Programme (see Section 7.2).

Uganda's competitive advantage is not only determined by production costs and yields but also by local and international transport costs. In this respect, it is at a disadvantage compared to more developed non-traditional agricultural exporters in Africa such as Kenya and Zimbabwe. Uganda's road system has not yet fully recovered from decades of financial mismanagement and civil war. International transport costs are inflated by its land-locked position and by inefficiencies in rail transport to East African ports, and by a scarcity of northbound cargo space from Entebbe airport. The competitive advantage of perishable commodities like fruit, vegetables and flowers depends largely on the competitiveness of air-freight rates. Fortunately, Uganda's

position has recently improved because of a joint initiative by the branch organisations for flowers exporters (UFEA) and the fruit and vegetable exporters (HORTEXA) (see Section 2.1).

Uganda's future competitive advantage depends on developments in yields, labour costs, and local and international transport. Quality is an additional issue. To stay in the market, top quality products are required for almost all non-traditional agricultural export commodities. This relates not only to production and harvesting techniques, but also to processing, packaging, (pre-)cooling and (airport) handling procedures. The latter three factors have, for instance, affected the quality of Uganda's exported fruit and vegetables (see Section 4.4) and in the case of hides and skins, poor processing has been a major constraint regarding better quality (see Sections 5.2 and 5.3).

International supply and demand

All of Uganda's current non-traditional agricultural export commodities face strong competition in the global market. The main competitors are usually other African countries: Kenya and Zimbabwe in the case of fruit, vegetables and flowers, Kenya and Tanzania for Nile perch, maize and beans, Madagascar in the case of vanilla, and Sudan concerning sesame seed. Competitors may, however, also be located on other continents: like China, Turkey and Argentina for hides and skins, and Indonesia for vanilla. With the exception of Nile perch, Uganda is always a small player on the international stage and operates as a market follower.

Ugandan exporters of commodities such as roses, vanilla, sesame seed, hides and skins have over the years faced declining and/or widely fluctuating international market prices. As a result, producer prices have also declined and/or fluctuated. This brings uncertainty for producers involved and makes the commodities less reliable sources of income.

Future international price developments are uncertain for most of the non-traditional agricultural commodities. In the case of fish, price developments depend largely on the EU (open or closed borders) and on export quotas set by Uganda, Kenya and Tanzania to sustain yields (see Section 3.5). In the case of maize and beans, production and population developments in East Africa determine regional price developments (see Section 7.3). In the case of sesame seed, Uganda's fate is largely in

the hands of Sudan (see Section 8.3). As for hides and skins, supply developments on the global market and fashion in the western world will determine future prices (see Section 5.5). Global supply developments are a potential obstacle in the case of vanilla where a saturated global market looms (see Section 6.5). Finally, in the case of flowers and fresh fruit and vegetables, production for export is increasing all over the continent, a factor that will probably put (further) pressure on prices (see Sections 2.1 and 4.2).

Competition and coordination in the marketing chain

Uganda's marketing channels for non-traditional agricultural export commodities are generally short. Either small-scale producers supply exporters and their agents or exporters produce the commodities themselves. The exporters sell at an auction in Europe (flowers) or directly to importer-wholesalers (fish, fruit and vegetables) or importer-processors (vanilla, hides and skins).

The number of exporters per commodity is usually limited. In the case of sesame seed this has led to an unhealthy situation whereby two exporters appear to be setting farm-gate prices at relatively low levels (see Section 8.4). For vanilla there is one clear market leader, a situation that affects farm-gate prices because of the curing method used by this trader (mainly rapid-curing). However the number of vanilla exporters who are using traditional curing methods is increasing (see Sections 6.1 and 6.6). For hides and skins, and fruit and vegetables, the number of exporters is also limited but competition for supplies is high, especially in accessible rural areas.

Contract coordination is regularly used to reduce marketing risks. The system provides farmers and fishermen with willing buyers, and exporters are guaranteed supplies. The system is beneficial to both parties. However contract coordination in Uganda is often undermined by chance-seeking exporters and opportunistic suppliers. Enforcement of word-of-mouth agreements is a problem. Malevolent importers in Europe are yet another constraint, especially in the case of fruit and vegetables. At present, contract farming of fruit and vegetables is losing ground. Farmers and exporters are focusing on the spot market which increases uncertainty, particularly for farmers in less accessible areas (see Section 4.5).

In the hide and skin trade, pre-financing is used to coordinate the collecting trade. It is beneficial to butchers and collecting traders, who generally lack working

capital, and to exporters who are assured of supplies. Opportunistic behaviour is also a problem here. Moreover, pre-financing leads to low undifferentiated prices that do not provide an incentive for high-quality hides and skins (see Section 5.2).

Many traders are trying their luck in non-traditional agricultural exports, but relatively few will succeed in the long term. Lack of knowledge of the international market is an important reason for failure, and for producer-exporters, lack of experience in production is another. The more advanced the production requirements and the higher the international quality standards are, the longer the learning curve. Experience in the flower sector has shown the need for such a learning process with high bankruptcy rates among those who entered the sector at an early stage. The pioneers made mistakes from which others have learned but from which they themselves could not recover (see Section 2.1). Thus, the success of new non-traditional agricultural exports may go in phases, with temporary setbacks too.

Government policies and policy constraints

The long-term competitiveness of Uganda's non-traditional agricultural exports is influenced by government policies. So far, the government has been pro-active in promoting non-traditional agricultural exports. It took both general macroeconomic measures and specific sector measures to stimulate trade and investment and to increase Uganda's competitive advantages. It stimulated foreign investment by passing the Investment Code and by establishing the Uganda Investment Authority (see Section 1.3).

But it is not time for the government to rest on its laurels. There are still a lot of policy-related constraints affecting exports. Different government agencies interpret measures differently, licensing and duty drawback schemes are time-consuming, the financial sector is still not healthy, export financing is expensive, the legal system is weak, and the physical infrastructure remains underdeveloped (see Section 1.4). The new Land Act has not yet been fully implemented (see Section 2.3) and corruption is rife, especially amongst customs officials. And last but not least, the political future of Uganda is uncertain, a factor that influences investment decisions. Uganda may have a bright future in non-traditional agricultural exports, but only if the country remains stable and its policy-related constraints are solved.

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1. Introduction

1.1. The need for export diversification in Africa

Over the last two decades agricultural export diversification has been pushed as an economic development strategy for Sub-Saharan Africa. Traditional export crops such as coffee, cotton, cocoa, palm oil and tobacco are all suffering from large price variability and declining world market prices. Diversification into so-called non-traditional agricultural exports is therefore being tried in commodities such as vegetables, fruit, cut flowers, meat, fish, bee products, herbs, spices, nuts, dyes, essential oils and organically grown traditional export crops (Duncan, 1993; Delgado, 1995; UNCTAD, 1996; UNDP, 1998; World Bank, 1994, 2000).

After more than ten years of experience of diversification, it is now time to look more closely at this development strategy. So far, few comprehensive country studies exist. In an attempt to rectify this situation, the present working paper deals with Uganda, the 'Pearl of Africa'. In the early 1980s its agricultural exports were extremely lopsided with 95 per cent of export revenues coming from coffee. Since 1990, however, the Ugandan government has been very pro-active in pursuing diversification. International donors have generously supported its policy, providing both expertise and financial means. If agricultural export diversification is to be a suitable development strategy for Africa, Uganda is a country where success should be evident.

1.2. Defining Uganda's non-traditional agricultural exports

It is important to define what is meant by non-traditional agricultural exports. There is no universal definition for several reasons. First, it is generally agreed that non-traditional exports started later than traditional ones, but there is no agreement on the moment in history that differentiates traditional from non-traditional. Second, an export commodity may be traditional in one country while being non-traditional in another. Finally, an export commodity may be regarded as agricultural in one country and non-agricultural elsewhere. Thus, a definition of non-traditional agricultural exports has to be country specific.

According to the Ugandan government, traditional exports are 'long-term export cash crops formerly introduced to Uganda by the colonial masters' (MFPED, 1998: 73). On the basis of this definition one would expect non-traditional exports to have started after independence. However, non-traditional exports 'are commodities that have featured in Uganda's export trade over the last ten years' (*ibid.*). The latter definition may seem curious because it leaves a twenty-five year gap (1962-1986). This is, however, understandable. When the NRA/NRM assumed power in Kampala in January 1986, it had to rebuild a country plundered by successive military regimes and torn apart by civil war. Export commodities that had been introduced after independence had not survived the dark years. Therefore, it could be said that non-traditional exports were introduced after independence and after 1986, with a note that some were not being introduced for the first time.

In 1987 the Ugandan government introduced its Economic Recovery Programme (ERP) aimed at macroeconomic stabilisation. The results were disappointing due to high inflation, drought, low coffee prices, stranded reforms, ongoing war in the north of the country, and border clashes with Kenya (Buxton and Kayizzi-Mugerwa, 1999; Ochieng, 1977). In 1990, reform efforts were doubled with the help of a number of successive arrangements under the Enhancing Structural Adjustment Facility (ESAF) programme. This time the aim was not only stabilisation but also adjustment. One of the explicit aims became the diversification of agricultural exports (Brett, 1996; Ochieng, 1997). Non-traditional exports became a separate category in the export statistics, to be distinguished from coffee, cotton, tea and tobacco that were labelled traditional exports.

The statistics did not differentiate between agricultural and non-agricultural. This categorisation was introduced later by the World Bank in its analysis of diversification efforts in the Ugandan agricultural sector (World Bank, 1996). The World Bank used a wide definition that not only encompassed agricultural crops, but also included fish, hides and skins. This was in accordance with the demarcation of ministerial responsibilities in the country - with one ministry being responsible for agriculture, livestock and fisheries.

1.3. The objectives of agricultural export diversification in Uganda

Generally, diversification in Sub-Saharan Africa is supposed to bring economic development, but this is more a statement than a clearly defined objective. The Ugandan government mentions two general aims: agricultural export diversification should help to restore the equilibrium in the balance of payments, and should contribute to poverty eradication and food security. Non-traditional agricultural exports are to be instrumental in restoring the balance of payments by increasing total export earnings for the country and by reducing fluctuations in revenues from exports (MFEP, 1994) and are to contribute to poverty eradication and food security by providing income to (poor) rural households. This income will improve households' food security, not necessarily through food self-sufficiency but also through the higher purchasing power of the households involved (MAAIF, 1999).

The beneficiaries are not only producers but also agricultural labourers and employees in export/processing firms. In the case of the producers, benefits result from sales of non-traditional commodities and for agricultural labourers and employees at export/processing firms, the benefits include not only salaries but also fringe benefits such as food and housing.¹ Their labour conditions have also to be taken into account. Some non-traditional export crops require large amounts of agrochemicals that are a potential threat to people's health. The positive impact of generated incomes may thus be nullified by occupational health hazards.²

¹ See also Holtzman (1995) on non-traditional agricultural exports in Madagascar.

² See also Ohayo-Mitoko (1997) on pesticide exposure among Kenyan agricultural workers.

The Ugandan government stipulates a few prior conditions for agricultural diversification. Like agricultural development in general, diversification has to be based on utilising resources such as land and water effectively and in a sustainable manner (MAAIF, 1999).³

The Ugandan government aims at producing agricultural exports that are competitive in the long term (MAAIF, 1999). This is related to long-term supply and demand developments in the international market and to production and marketing costs in Uganda compared to other countries. Pro-active government policies may help to decrease these costs. According to the government, competitiveness is enhanced by adding value to the commodities concerned (as is advocated in many African countries; see Cramer, 1999).

The impact of the balance of payments is considered in the next section, and the other objectives of the diversification of Uganda's agricultural exports are assessed in the chapters specifically dealing with the individual commodities.

1.4. The importance of non-traditional agricultural exports in Uganda

In 1990, Uganda exported traditional agricultural commodities worth US\$ 150 million and non-traditional agricultural commodities worth a little over US\$ 20 million (Table 1.1). By far the most important traditional export crop was coffee; with the remainder including cotton, tea and tobacco. The most important non-traditional agricultural commodities were hides and skins, sesame seed, maize and beans.

Six years later, in 1996, the value of Uganda's traditional agricultural exports had more than doubled, but the value of its non-traditional agricultural exports had more than quintupled (Table 1.2). Coffee was still the most important traditional export crop, but its share of the market had declined from 79 to 56 per cent of total export revenues. Fish, cut flowers, vanilla and fresh fruit and vegetables had emerged as new non-traditional agricultural exports, in addition to those already mentioned.⁴

³ See also Tibaijuka (1991/92) on wood as a non-traditional export commodity in Tanzania.

⁴ Not only the non-traditional agricultural exports rose fast, but also the non-traditional other exports (Table 1.1, row 2.2). This was primarily because of the (re-)export of gold.

Table 1.1. Uganda's traditional and non-traditional exports by value, 1990-1999 ('000 US\$)

	1990	1992	1994	1996	1998	1999*
1. Trad. (agricultural) exp.	152,686	115,515	366,847	434,116	353,632	341,464
2. Non-trad. exports	24,972	31,252	93,092	276,539	180,477	137,286
2.1. NT agricultural exp.	20,834	24,529	68,832	106,637	75,607	53,633
2.2. NT other exports	1,327	2,048	5,226	72,338	51,091	51,578
2.3. NT unspecified**	2,811	4,675	19,034	97,564	53,779	32,075
3. Total exports (1+2)	177,658	146,767	459,939	710,655	534,109	478,750

Sources: MFPED, 1998, UBS, 1999, MFPED, 2000.

* Figures for 1999 are provisional

** Includes primarily other non-traditional exports, but also some minor non-traditional agricultural exports. Includes re-exports and is therefore an over-estimation of Uganda's export potential.

By 1998, both the value of traditional and non-traditional agricultural exports had declined. In the case of traditional commodities, the production of cotton and coffee was drastically affected by the El Niño weather patterns. For non-traditional agricultural commodities, a major reduction in exports of sesame seed, maize and beans caused the decline in revenue, the reasons for which will be explained in Chapters 7 and 8. The exports of new non-traditional commodities such as fish, cut flowers and vanilla continued to grow.

The year 1999 saw a further decline in both traditional and non-traditional agricultural exports. In the case of traditional exports the cause was lower international coffee prices. The decline in non-traditional exports resulted primarily from a sharp reduction in fish exports due to an EU import ban (see Chapter 3).

Table 1.2. Uganda's growth of traditional and non-traditional agricultural exports (1990=100)

	1990	1992	1994	1996	1998	1999
Traditional agricultural exports	100	76	240	284	232	223
Non-traditional agricultural exports*	100	118	330	512	363	257

* The indices for non-traditional agricultural exports are based on row 2.1 of Table 1.1. This means that the limited non-traditional agricultural exports included in row 2.3 are not incorporated in the index. The growth of non-traditional agricultural exports, as shown by the indices, is therefore a slight underestimation.

The figures show that non-traditional agricultural exports increased Uganda's export earnings considerably, one of the objectives behind the government's export diversification policies (see Section 1.3). The bulk of export revenues, however, still come from traditional agricultural exports, or, to be more precise, from coffee.

The figures show that revenues from non-traditional agricultural exports fluctuate at least as much as those from traditional agricultural exports. Upward and downward changes partly coincide (as in 1996 and 1998), which means that fluctuations in total annual export earnings may increase instead of decreasing as a result of non-traditional agricultural exports. Thus, the government's objective of reducing fluctuations in export earnings has not yet been met by the increase of non-traditional agricultural exports.

1.5. Uganda's pro-active government policies

The Ugandan government has been very pro-active in promoting export growth and diversification. In 1990 it legalised the black foreign exchange market which used to paralyse those without links with top government officials and rewarded speculators rather than the producers of tangible goods (World Bank, 1996). The government allowed the establishment of foreign exchange bureaux that could buy and sell foreign exchange without questions having to be asked.

The tedious and cumbersome export licensing system was replaced by a system of export certificates. Export licenses were commodity and value specific, whereas renewable export certificates, valid for six months, enabled the holder to trade, without any value limitations, in any commodity not included on the export and import lists of restricted items (MFEP, 1994).

In 1991, tax and revenue systems were rationalised by the newly established Uganda Revenue Authority. In the same year, a new law, the Investment Code, was passed. Under the code, business enterprises have the benefit of duty exemption on capital and construction materials; and are eligible for a subsidy on start-up costs. Exporters who hold a certificate of incentives are entitled to a drawback of duties and sales tax payable on imported inputs used in producing export commodities. The same certificate entitles to the exemption from corporation tax, withholding tax and tax

dividends for a period of three to five years depending on the size of the investment. Certificate holders are also allowed to externalise funds (e.g. profits). Finally, the Investment Code offers additional protection to foreign investors by stating that, in the case of compulsory acquisitions of foreign property, the government will have to compensate the owner on the basis of market value (MFEP, 1994).

The 1991 Investment Code also provided for the creation of the Uganda Investment Authority (UIA), a one-stop investment clearing agency that promotes, facilitates and supervises investments in Uganda. It aims to: (1) initiate and support measures that enhance the investment climate in Uganda; (2) promote investment in Uganda; (3) grant permission for the commencement of new businesses; (4) provide and disseminate information on incentives available to investors; (5) assist new and existing investors by providing support services; and (6) recommend to the government national policies and programmes to promote investment in the country (Obwona, 1997).

Additional measures were taken to improve Uganda's investment climate. The physical infrastructure of the country was slowly but steadily rehabilitated. In 1993, the Bank of Uganda, in an effort to improve the health of the financial sector, was made an independent manager of monetary policy and a supervisor of monetary institutions.

All the above mentioned measures helped to facilitate export growth and the development and revival of non-traditional agricultural exports. Barriers to entry by agroenterprises were reduced, as were transaction costs associated with investment and trade.

1.6. Uganda's policy-related constraints

All in all, an impressive range of measures was taken but many worked better on paper than in reality. Obwona (1997) observes that there is a wide discrepancy between the rhetoric in the Investment Code and the reality that especially foreign investors face. The UIA is not a true one-stop shop because it does not have the authority to grant all the licenses needed for operation and it cannot guarantee access to serviced land for investors. The power of administration of foreign investments is vested in the UIA, but at the same time many agencies still maintain a decision-making capacity. The UIA may, for instance, license an investor for an incentive that is then interpreted and

implemented differently by revenue collectors. The Uganda Revenue Authority often revokes incentives given by the UIA, especially with regard to tax holidays.

A survey among exporters in 1995 showed that the system of export certificates is more efficient than the previous one of export licenses, but export certification is slow and time-consuming. Obtaining a certificate is expensive for exporters based up-country since they have to travel to Kampala, renewal may be difficult and the certificate's period of validity is too short. The replacement of export licenses by export certificates has not solved the problem of corruption (MFEP, 1995).

The duty drawback scheme is also cumbersome, time-consuming and costly to follow up. Some exporters are not aware of the scheme, others do not bother because of the inconvenience. Consequently few exporters benefit from the scheme (MFEP, 1995).

The financial sector is not yet healthy. The liberalisation of former financially repressive policies had a limited impact on the performance of the financial market in the 1990s, partly due to a lack of complementary measures to address problems of information, risk management, contract enforcement and corruption (Obwona and Musinguzi, 1998). The World Bank observed in 1997 that, despite a series of reforms, 'the financial sector has still a long way to go before it can provide a valuable service to the private sector' (World Bank, 1997: 6). This reconfirms an earlier observation by the IMF that working capital is very expensive and term financing is scarce. Investors are forced to depend on their own resources or donor financing for investment funding (IMF, 1995).

Basalirwa (1995) adds that the Export Credit Refinance Scheme, which is administered by the Bank of Uganda, is not performing well with corruption and ill-intentioned borrowers being the root cause of problems. ADC/IDEA (1995) states that corruption is also a stumbling block in Ugandan development finance companies.⁵ They solicit *ex gratia* payments for speeding up application processes. This is, however, not the only reason for delays. Many borrowers do not understand the approval process of the organisations.

Uganda's legal system is another weakness. The administration of justice in Uganda is plagued with long delays, lack of publications and non-transparency. This

⁵ There are three development finance companies in Uganda: the Development Finance Company of Uganda, the Uganda Development Bank, and the East African Development Bank.

encourages corruption and makes business planning difficult. Foreign investors try to avoid the judicial system and prefer to pursue private arbitration when necessary (Obwona, 1997). The inadequate legal framework and poor law enforcement are major concerns to potential investors (World Bank, 1999a).

The country's physical infrastructure requires further upgrading since poor roads continue to cause problems for domestic transport, especially when it rains. Transporters also struggle with high fuel costs. Rail transport serves as an alternative means of transport to Mombasa, but the Ugandan and Kenyan rail networks do not perform well. Transport from Kampala to Mombasa takes a long time, and rampant theft of transit goods is a constant problem.

Power cuts and voltage fluctuations are also a major concern. Both became more widespread during the 1990s because of rising industrial and household demands. The extension of the Owen Falls dam is expected to ease the situation.

Corruption remains a serious problem. A recent study by the World Bank confirms that almost all exporting and importing firms in Uganda (91%) have to pay bribes. They constitute a heavy burden on the businesses concerned and adversely affect their growth. Firms typically have to pay bribes when dealing with public officials whose actions directly affect the firms' business operations. Such dealings cannot easily be avoided when importing, exporting or requiring public infrastructure services (World Bank, 1999b). Customs officials are especially known to cause trouble, a finding confirmed by a recent UNCTAD study (UNCTAD, 1999).

A political weakness is the perception of investors that Museveni is the key to Uganda's economic recovery and that he is indispensable for the country's progress. Investors fear for the future of Uganda if he does not remain in power. The on-going conflicts in the north of the country are also eroding investor confidence and are creating a negative image of the country. Finally, policy unpredictability is a problem, both at the macroeconomic level as well as at a sectoral level. An example is the frequently revised tax incentive policy with regard to duties payable on industrial raw materials (Obwona, 1997).

The World Bank concludes that the Ugandan government, as well as donors, should pay greater attention to solving infrastructure problems and to easing the 'diffused institutional weakness', particularly in the financial and legal systems.

Political and policy uncertainty should be avoided to attract investors in traditional and non-traditional exports (World Bank, 1999a).

1.7. Structure of this report

In the following chapters Uganda's most important non-traditional agricultural export commodities are investigated. They include flowers (Chapter 2), fish (Chapter 3), fresh fruit and vegetables (Chapter 4), hides and skins (Chapter 5), vanilla (Chapter 6), maize and beans (Chapter 7) and sesame seeds (Chapter 8). Together these crops represent over 95 per cent of total non-traditional agricultural exports by value.

The different chapters are based on research carried out by the author in 1998, 1999 and 2000. Existing scientific material, research reports, government documents and databases were analysed. In addition, farmers, traders, exporters and policy makers operating in the various sub-sectors were interviewed.

Less important commodities such as dried produce (e.g. dried bird's eye chillies, mangoes, mushrooms)⁶, honey, papain (dried latex from papaya)⁷, cocoa beans, groundnuts, soya beans, pyrethrum, silk cocoons and organic cotton are not discussed separately. They are (still) relatively less significant in terms of foreign exchange earnings but this does not mean that they should be ignored altogether as they may be of importance to other development goals. The production of bird's eye chillies, for instance, requires very little investment and is therefore an interesting non-traditional crop for poor farmers. Mushrooms are grown in farmers' houses, an activity that can be combined with housekeeping and the care of small children. Dried mushrooms are thus an interesting cash crop for women. The production of papain adds value to papaya, thus generating additional employment and foreign exchange. The cultivation of organic cotton is much more environmentally friendly than that of ordinary cotton. But these commodities also have their limitations. The world market for dried mushrooms is oversupplied, and Uganda does not have a competitive advantage in their production.

⁶ Mushrooms are grown by individual women and women's groups under the umbrella of the 'Uganda Association of Women in Mushroom Production for Export'. The centre of production is in Kabala District.

⁷ The only industrial producer of papain in Uganda is RECO Industries in Kasese.

The world market for organic cotton is developing very slowly, and a lot of organic cotton still has to be sold as ordinary cotton. The world market for dried bird's eye chillies is highly competitive and prices are unstable. Therefore care has to be taken when promoting these commodities, as with the promotion of any non-traditional agricultural commodities.

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2. Flowers

2.1. The teething troubles of an emerging industry

Ugandan floriculture is still young. The first commercial flower farm started growing flowers for export in 1992 and exported them from 1993 onwards (Table 2.1). Within five years the number of flower farms increased to nineteen.⁸ All but one grew roses (supplemented on a few with other cut flowers such as solidago and limonium).⁹ In 1998, the area under roses was 77 hectares (UIA, 1998).¹⁰ This made Uganda a minor rose grower compared to Kenya (400 ha) and Zimbabwe (250 ha), but a major player compared to other newcomers like Zambia (40 ha), Tanzania (25 ha), Swaziland (15 ha) and Malawi (10 ha) (ADC/IDEA, 1998a).

During the first few years Uganda piggybacked on the Kenyan cut-flower industry. This had clear advantages. Kenya supplied reasonably priced technicians and skilled labourers with experience in building greenhouses and installing irrigation equipment. Kenyan flower-farm supervisors became farm managers in Uganda, and fertilisers, chemicals and packaging materials were imported from Kenya. Cargo planes

⁸ In 1998: Equatorial Flowers, Harvest International, Horizon Roses, Jambo Roses, Kajjansi Roses, Mairye Estates, Melisa Flowers, MK Flora, NBA Roses, Nile Roses, Nsimbe Estates, Pearl Flowers, Royal Flowers, Scoul Roses, Tropical Flowers, UgaRose, Van Zanten (U), Victoria Flowers, and Zziwa Horticultural Exporters.

⁹ One flower farm dealt only with chrysanthemum cuttings (Van Zanten) and one with chrysanthemum cuttings and roses (Fides leasing greenhouses on Nsimbe Estates).

¹⁰ The total area under flowers was 80 hectares (ADC/IDEA, 1999a).

that carried flowers from Nairobi to Amsterdam made a stopover at Entebbe. Thus, the Ugandan flower industry was able to grow quickly.

After a couple of years it became clear that this piggybacking strategy was not bringing the desired results. Consultants had based their choice of rose varieties on experiences in Kenya, Israel and the Netherlands, without paying proper attention to the physiological characteristics and disease tolerance of both market varieties and root stocks (ADC/IDEA, 1998b).¹¹ The (large-flowered) hybrid tea varieties, which do well in Kenya and fetch high prices on the European market, did not flourish in Uganda which is more humid and where night-time temperatures are higher. As a result, the roses grew too fast: the stems were thinner and the buds had fewer petals and were smaller. At auction in the Netherlands, the Ugandan tea hybrids fetched lower prices than anticipated.¹² The lifetime of the rose plants was also unexpectedly short. Tea hybrids are supposed to have a productive lifespan of seven years (MFEP, 1993) but in Uganda their yields already reached a peak in the second year of full production (the third year after planting) and deteriorated in the subsequent two years (ADC/IDEA, 1998b). Early Uganda rose farmers ran into financial trouble because their cost-benefit calculations were based on premium prices and a seven-year growth cycle, but they received lower prices and had to invest in new planting material after only four to five years.

Economic returns were also affected by changes at the international level. Financial institutions had only been willing to disburse loans to investors in floriculture in US dollars, while the marketing of the flowers was mainly in Dutch guilders (Susman, 2000). Between 1992 and 1998 the US dollar appreciated almost 20 per cent against the Dutch guilder, increasing production costs and interest charges. At the same time selling prices of imported tea hybrids at Dutch auctions fell by 20 per cent due to increasing global supplies (ADC/IDEA, 1998b). These developments had not been foreseen in the original cost-benefit calculations.

¹¹ Commercial rose varieties are grafted onto rootstocks because they are weak on their own roots. The grafting may also give a higher yield and increased stem length.

¹² At the Dutch auctions, average prices for tea hybrid varieties from Uganda were lower than for those from Zimbabwe, Zambia, Kenya and Tanzania (ADC/IDEA, 1998b).

In addition, many flower farms lacked experienced management and had insufficient working capital to cater for day-to-day input requirements. A lack of locally produced equipment, fertilisers and agrochemicals led to input shortages and high (import) prices. A lot of the imported planting material appeared to be diseased and of bad quality, with no recourse being obtained from the responsible nurseries (Susman, 2000). The results were devastating with farmers experiencing severe financial losses instead of the originally envisaged profits. By 1999, five flower projects had gone bankrupt with three projects being placed in receivership in 1999 alone. According to the Bank of Uganda, at least five of the remaining eighteen floriculture farms were suffering various degrees of financial difficulties (Susman, 2000).

Those flower farmers that had the financial means uprooted their tea hybrids and switched to or increased their areas of (small-flowered) sweetheart varieties.¹³ These roses appeared to do better in Uganda. Production reached a peak in the third year of full production and decreased in the subsequent two years but not at the same rate as the hybrid tea varieties did. Quality was less of a problem. The price per stem at the Dutch auctions was 30 per cent lower for Ugandan sweethearts than for Ugandan tea hybrids (1998), but the yield per square metre was 100 per cent higher. As a result the returns per square metre were higher for sweethearts than for tea hybrids (ADC/IDEA, 1998b). Auction prices for sweethearts decreased by 25 per cent but Ugandan flower farmers were still able to make a profit under these circumstances.

The unfortunate choice of tea hybrids has been only one of the teething problems of the Ugandan flower industry. Another was the flower handling at the airport. Over 90 per cent of Uganda's flowers are sold through auctions and brokers in the Netherlands for subsequent distribution in Europe. The remainder are sold directly to importers and supermarkets in the UK, Sweden, Norway, France and South Africa but all the flowers leave Uganda through Entebbe airport. Until 2000, most of the flowers were flown to Europe on cargo planes of the Ugandan-registered company Das Air (with ANOVA as its local consolidator). Four times a week Das Air planes made a stopover at Entebbe before flying on to Nairobi to load most of their flower cargo. In addition to Das Air,

¹³ In 1997, 52 per cent of the area under roses was still tea hybrids, and 48 per cent was sweethearts (ADC/IDEA, 1999a).

airlines such as British Airways, Air France and Alliance Air were sometimes used to transport flowers.

Initially Entebbe airport did not have any cold storage facilities which caused problems. Flower exporters brought their consignments to the airport by refrigerated truck, but they had to unload the produce for inspection by customs officials, and for palletisation. The quality of the flowers deteriorated because of the high outside temperature. In 1995 a USAID-funded cold store was built but it remained unused for five years. It was supposed to be managed by a private company but the Zimbabwean company that won the tender put the management in the hands of a German clearing firm that went bankrupt before starting operations in Uganda. The government then asked the Ugandan Flower Exporters' Association (UFEA) to run the cold store but it was not at that time well enough organised and had to refuse the contract. Finally, Entebbe National Handling Services Ltd (ENHAS) got the license but did not use it. The company, which is owned by the president's brother, built another cold store instead to be used primarily for fish.

It is not completely clear why ENHAS left the USAID-funded cold store unused. One of the reasons might, however, be its location. It had been built on the old part of the airport, one kilometre from the present cargo-handling area, and was intended to be part of a new cargo centre but the plans did not materialise. ENHAS, which had a monopoly on the handling of all cargo at Entebbe airport, probably preferred to keep its activities centralised.¹⁴ It built a new cold store for fish near the present cargo-handling area and left the USAID-funded cold store unoccupied.

One may ask why ENHAS took the licence for the cold store when it did not intend to use it. Most probably, ENHAS felt that it would be better to lock the building up rather than leave it to a competitor who might then demand a handling licence, thus breaking ENHAS's handling monopoly.

ENHAS did not need the cold store to make money as it could charge flower exporters for handling charges anyway (see below). Thus, the cold store remained empty until the year 2000. In 1999, UFEA and HORTEXA set up a company called Fresh

¹⁴ The only other company with a handling license is DAIRO Air but it is allowed to handle cargo only for its own Das Air flights (ADC/IDEA, 1999b).

Handling,¹⁵ which took over the licence to manage the cold store from ENHAS and started to operate it in the second half of 2000.

Entebbe Handling Services did not only play a dubious role in the cold store affair but has also been accused of the inappropriate handling of flowers. It took over from the Civil Aviation Authority (CAA) in 1996. Handling under the CAA had been chaotic, but under ENHAS the situation improved only slightly. Palletised flowers were still left on the loading platform for hours, which resulted in the flowers becoming overheated. Problems escalated because almost one out of every three cargo planes arrived late. Dutch flower importers in Holland measured flower temperatures of up to 40 degrees centigrade, whereas the temperature should not exceed 8 degrees. The high temperatures caused quality problems such as rot, overripeness, botrytis and a poor vase life. Some of the flowers could not be sold, while the remaining ones fetched low prices (ADC/IDEA, 1999b).

The monopoly position of ENHAS inflated handling costs. The CAA had been charging US\$ 0.07 per kg, and ENHAS did not change this when it took over. Until 1999, it charged US\$ 0.07 per kg for handling alone, whereas providers in Kenya charged US\$ 0.02 to 0.04 per kg for handling and cold storage, and in Zimbabwe US\$ 0.025 per kg, also for handling and cold storage (ADC/IDEA, 1999b). In both Kenya and Zimbabwe more than five handling companies competed with each other. The higher charges by ENHAS did not result from higher costs, but from the company's monopoly position. In 1999 after a feasibility study for Fresh Handling, which was in the process of formation, showed that it could operate at US\$ 0.05, ENHAS announced a reduction in its charges to US\$ 0.05.

With the introduction of Fresh Handling, ENHAS has partly lost its monopoly position. Fresh Handling runs the cold store and has a handling licence that allows it to palletise export produce. ENHAS holds its monopoly on all ramp handling (the loading and off-loading of aircraft). This means that it can still leave palletised flowers on the loading platform for too long. ENHAS's licence expires in 2001, and it is not clear what will happen thereafter.

¹⁵ Fresh Handling has UFEA, HORTEXA and individual exporters of flowers and fresh produce as shareholders.

In addition to handling problems, Ugandan flower exporters faced problems in securing cargo space and obtaining competitive freight rates. In the late 1990s, the demand for cargo space started to exceed supply (see also Chapter 4), as had happened in Kenya in the 1980s. Large Kenyan flower growers had reacted by hiring carriers,¹⁶ but Uganda does not have individual flower growers big enough to do so. Their only option is to let Fresh Handling hire a cargo plane. This is indeed what the new company has been doing since September 2000. As a result, scarcity of cargo space is less of a problem to flower exporters than it was before.

Kenyan air-freight charges are generally lower than in Uganda with the high-season figures for 1999 being: Uganda US\$ 1.80 to 1.90, Kenya US\$ 1.65 to 1.85 (ADC/IDEA, 1999b). Because of the large volume of available charter space and the number of agents who are brokering this space in Kenya, freight rates there decreased considerably in the 1990s. This is, however, not the only reason for the difference in rates with Uganda. Aviation fuel in Uganda is also more expensive because it has to be pumped through a pipeline from Mombasa, via Nairobi to Eldoret. From there, the fuel goes by road to Entebbe. The additional transport from Nairobi to Entebbe makes the fuel more expensive than that at Jomo Kinyata airport. The pipeline between Nairobi and Eldoret inflates costs because of the limited quantities that are pumped at a time, and the need to clean the pipe before using it for other types of fuel. Transport from Nairobi to Entebbe by road or rail is thought to be cheaper, but the Kenyan government does not allow that.¹⁷

It can be concluded that, if (1) Ugandan rose farmers can make the switch from tea hybrids to sweethearts, (2) airport handling at Entebbe is improved, and (3) sufficient cargo space is available at competitive rates, Uganda has a bright future in rose production. (The latter two conditions could also be phrased as: 'If Fresh Handling comes up to expectations'.) The country is competitive in terms of capital and operating costs, not only with the Netherlands (which is no surprise) but also with Kenya, Zambia and Zimbabwe (Table 2.2).

¹⁶ They have done so to date. The Kenyan company Sulmac fills an entire cargo plane with flowers and vegetables from its own farm, while Oserean uses the largest part of the cargo space for its own flowers, allowing other exporters to fill the remaining space.

¹⁷ The Kenyan government argues that transport by road or rail would encourage theft. Kerosene is heavily taxed in Kenya and stolen aviation fuel could be used instead.

The question remains as to whether the expansion of rose farming in Uganda is desirable from a national point of view. To answer this question we look in the coming sections at three aspects: labour, land and water.

Table 2.1. Flower exports from Uganda, 1990-1999

Year	Quantity (tons)	Value (‘000 US\$)	Year	Quantity (tons)	Value (‘000 US\$)
1990	0	0	1995	133	343
1991	0	0	1996	380	2,809
1992	0	0	1997	537	3,592
1993	97	158	1998	1,522	6,704
1994	241	531	1999	1,563	7,328

Sources: 1990-1997: UBS (1999); 1998 and 1999: MFPED (2000).

Table 2.2. Comparative advantage of Uganda in terms of capital and operating costs (1996)

Country	Capital costs (US\$ per m ²)	Operating costs (US\$ per m ²)
Uganda	27.68	22.68-28.12
Kenya	29.56	39.93
Zambia	29.64	30.50
Zimbabwe	36.64	30.50
The Netherlands	108.50	50.70

Source: UIA (1998).

2.2. Labour: labour conditions and safety measures

Floriculture is known to be a capital-intensive industry. In 2000, the development of one hectare of indoor roses required some US\$ 300,000.¹⁸ In addition to being capital intensive, floriculture is also labour intensive. In the initial stages, people are required for land clearing and preparation, the building of greenhouses, a packing house, cold rooms and irrigation systems, as well as raising the young plants. Once fully operational, jobs to be done include pruning, weeding, spraying with agrochemicals (fungicides,

¹⁸ Including all first year expenditures, but excluding buying/leasing of the land, building/buying of packing house, farm office, cold rooms, refrigerated lorries and generators.

insecticides), watering, applying fertilizers, harvesting flowers, packing and storing them, and, finally, transporting them to the airport.

One hectare of Ugandan roses requires some 20 to 30 workers.¹⁹ In addition, field supervisors and managers have to be employed. In 1999, the Ugandan floriculture sector employed a total of 3,300 people (ADC/IDEA, 1999a). The workers and supervisors are always Ugandans, whereas the managers are often foreigners. The majority of the owners/investors are Ugandan (in 1998 only four of the nineteen flower farms were foreign owned). Seventy-five per cent of the employees are female. The women operate mainly at an 'unskilled' level, performing delicate tasks such as cutting, sorting and packing, and at a clerical level. They are better than men at handling flowers.

Most employees are promptly and well paid. In 1999, 'unskilled' workers were paid USh 1,500 to 2,000 (US\$ 1 to 1.3) per day on ordinary flower farms, and USh 2,500 to 3,000 (US\$ 1.7 to 2) on better-paying ones. Semi-skilled workers, who did jobs like spraying, driving, repair and maintenance, were paid USh 3,000 to 4,500 (US\$ 2 to 3), and field supervisors USh 7,500 (US\$ 5) and above. Semi-skilled and skilled workers were employed on a permanent basis, whereas some of the unskilled workers were only employed during the export season that lasts eight to nine months. About two-thirds of all employees were permanently employed.

Based on a monthly wage of USh 1,500 to 2,000 unskilled workers earn some USh 350,000 to USh 530,000 in nine months. With such an income, they belong to the highest income earners in the rural areas.²⁰ Their jobs on the rose farms usually provide their prime source of income. Kaija (1999) interviewed employees on five rose farms and found that 89 per cent of them lived entirely off the income they earned on the farms while 11 per cent had some additional, less important source of income.

Not only the salaries but also the fringe benefits are attractive. All workers get a free hot meal at lunch-time and those who have to report early also get a free breakfast. The meals are nutritious and the diet is balanced (often more balanced than at home).

¹⁹ The actual number depends on the size of the farm (smaller farms generally have more workers per hectare) and the management style.

²⁰ In 1995/96 unskilled workers earned USh 1,000 per day, resulting in a nine-monthly income of about USh 230,000. At that time, the richest 10 per cent of the rural population had an average income of USh 165,000 (MFPED, 1998a).

The nutritional status of flower farm employees is at least 50 per cent better than that of neighbours not working on a flower farm (ADC/IDEA, 1999a).

The flower farms provide some of the workers and their families with accommodation. Those who have to come to the farm by public transport are paid a travel allowance and some employers assist employees in paying their medical bills. Once retired, all employees receive a pension. Under Ugandan law, employers are obliged to pay 10 per cent of employees' net wages into the national social security fund.

It can be concluded that labour conditions on Ugandan rose farms are relatively good. Some points need, however, attention. The first is the high turnover of labourers. Over one third of the workers do not have a permanent position. They are fired when the export season is over, and have to reapply for a job at the start of the next season. The three months at home are not a problem. If the rains permit, the period can be used to grow crops on the family farm. The problem is, however, that there is no guarantee of re-employment. The labour supply in the areas where the farms are located is much bigger than the labour demand. Therefore employers have a wide choice. Ex-employees have experience, which is to their advantage, but when somebody gets older or is less healthy the chances of being employed are less good. Additionally, if workers have been vocal in the past on improving labour conditions, an employer may think twice before re-employing them.

Workers who do not show up due to illness do not get paid. This rule is not only applied on most flower farms but by Ugandan employers in general. It can have severe consequences, especially if recovery is slow and many people are dependent on the wages normally brought home. The present rule is, however, difficult to change. If employees were entitled to some kind of sickness benefit, a whole system of checks would have to be introduced. A doctor would have to visit the patient to verify whether the person was indeed ill. He would have to report his findings to the employer and monitor the course of the disease. In rural areas of Uganda, doctors are scarce and already overworked.

The alternative is to open a dispensary at the flower farm, and to ask a doctor to be available for consultation a few times a week. Employees could then report there when they fall ill. Medicines could be dispensed free of charge or at low cost. Early

treatment reduces the chance of people getting seriously ill which is beneficial to both them and the employer.

Some of the Ugandan flower farms have indeed set up pharmacies on their premises but that is as far as they can go for the moment. An entire clinic with nurses and beds is not feasible. In Kenya some flower farms do have such facilities, but they are much bigger than the Ugandan farms (the biggest one employing some 5,000 people). These farms also have their own primary schools. This is again not feasible for Ugandan flower farmers but employers can, however, support primary schools in their neighbourhood.

There is no trade union that can speak up on behalf of flower-farm labourers. Ugandan law would allow such an organisation,²¹ but a flower workers' union does not yet exist. Some labourers may not be aware of the possibility to setting up a trade union, but most do not see the potential benefits. This is understandable. A flower workers' union would only be advantageous to them if the union officials were sincere. This is, however, not self-evident: Ugandan trade unions have been stigmatised as corrupt and there are many examples in Uganda of bribery when union officials have sided with employers. The National Organisation of Trade Unions (NOTU) is of little help in this respect. Constitutionally the NOTU is empowered to safeguard the interests of all registered unions affiliated to it and to protect workers throughout the country. However, the NOTU is unable to perform its role due to its own internal woes. These include internal power struggles amongst the affiliates for the control and leadership of NOTU (related to the material gains arising out of NOTU incumbency), an absence of accountability and transparency in the labour movement, the absence of democratic culture and practice within NOTU and its affiliates, a heavy reliance on declining donor support, and, last but not least, corrupt and inept NOTU officials and administrators (Okwe, 1999). The list of problems shows that the Ugandan labour movement is not in a healthy state, and that a flower workers' union might create more problems than it could solve.

A conscientious union could campaign for minimum wages and a maximum length of working days. As mentioned earlier, wages and labour conditions on flower

²¹ Freedom of association was fully guaranteed under Article 18 of the Republican Constitution, 1967. According to the 1976 Trade Union Decree no. 20, an employer is not allowed to fire an employee on

farms are generally good, but there are a few exceptions. At a government/ILO workshop in 1999 it was stated that, on some farms wages are still unacceptably low ('below the minimum') and working days too long (ILO/MGLSD, 1999). A flower workers' union could also campaign for permanent jobs to give workers more security. With fixed contracts, employers cannot lay off workers without warning or compensation as sometimes is the case at present (Kaija, 1999).

A union can also ensure that employees who are injured in the course of employment are compensated. Employers are obliged to pay such compensation in accordance with the Workmen's Compensation Act (Okwe, 1999). However, employees at present are generally paid their salaries while rehabilitating but receive no compensation (Kaija, 1999).

As long as trade unions are lacking, workers' committees (also called workers' councils) have to do the job. Most farms have such committees to discuss issues with the management on behalf of all farm workers. They tend to be sincere in their efforts and there is little room for corruption anyway, as they are closely watched by those they represent. The disadvantage of these committees is that they may operate in isolation, not knowing what is happening on other flower farms. Moreover, in cases of severe conflict with employers they do not have legal advisors to support them.

In theory, safety measures on Ugandan flower farms are adequate. Labourers who work with agrochemicals have to wear protective clothing. Fertilisers are applied in liquid form through the (drip) irrigation system (drip fertigation) and pesticides are in most cases applied through central spraying lines. When knapsack sprayers are used, workers have to wear personal protective devices such as boots, gloves, an overall and a head covering. These devices prevent dermal contamination, which, under field conditions, is the most significant form of entry of chemicals into the body.²² Other routes are inhalation, which is prevented by using a respirator, and ingestion, which may only occur when workers eat or smoke during spraying or when they do not wash afterwards.

Issuing proper safety measures is important, but supervising their compliance is even more so. Workers who handle agrochemicals tend to become careless over time.

account of his involvement in union activities (Kabumba, 1988). In 1998, a revised Trade Union Decree was in the official process of being enacted by parliament (MFPED, 1998b).

²² See Bonsall (1985), Ambridge (1988) and Ohayo-Mitoko (1997) on dermal contamination.

For instance, they remove their head covering when they are hot. They may also spill pesticides over themselves when mixing and loading sprayers. The measuring and pouring of small quantities of concentrated pesticides gives rise to more exposure than the actual spraying because the chemical is often 50 to 90 times more concentrated. Supervision is therefore important. Workers have to be continuously alerted to the hazards of the job.

On paper there is little difference between farms. The actual implementation and supervision of issued safety measures, however, differs considerably. The most advanced Ugandan flower farmers are very strict, especially because they are aiming for MPS certification. The MPS certificate was developed in the Netherlands and demands high safety standards for all farm labourers (as well as high environmental standards of production). In addition to the already mentioned safety measures, the farm is required to have, for instance, emergency showers at the area near where chemicals are loaded for spraying.²³ Spraying has to be done after all workers have left the greenhouse, and people who work with chemicals need to have all the protective clothing required.

In addition to farms that are quite strict and advanced, some farms in Uganda take their workers' safety less seriously. There is insufficient protective clothing, workers are not trained in safety practices, facilities for personal hygiene are missing, and regular medical examinations do not occur (ILO/MGLSD, 1999). Spraying is done when workers are in the greenhouse and workers involved do not have any protection. As a result of exposure to chemicals, they frequently get skin rashes and headaches.²⁴ Some have to be treated for eye problems (Okwe, 1999; Kaija, 1999). These things happen because farm supervisors are ignorant of the possible dangers or because they do not care.

²³ In addition, workers on MPS farms should have access to showers for normal use, toilets and treated drinking water.

²⁴ Similar health problems have been observed on tea plantations where workers often mix and apply herbicides without any form of protection (Carasco, 1993).

One last point of concern regarding labour is the management of pension funds. The flower farmers dutifully pay their employer contributions to the national social security fund, but newspaper reports have shown that this fund has been badly managed. Moreover, there are fears that the entire pension scheme may be unsustainable, a problem that cannot be easily solved. Flower farmers could join forces and start their own pension fund but it would be a major step requiring mutual trust and capable financial expertise. The flower sector may not be ready for this yet.

2.3. Land: occupants versus investors

In 1998/99 the area under flowers in Uganda was some 80 hectares, which is less than one square kilometre. The total area of Central Province, where all the flower farms are located, is over 37,000 square kilometres (excluding open water and swamps) (MFPED, 1998a). When comparing these figures it is clear that, in relative terms, floriculture only covers a small area of the land available.

The per-hectare returns to rural workers are clearly higher on a rose farm than on a smallholding. A rose farmer who employs 25 workers per hectare pays at least USh 9 million per ha per year in terms of wages. If this area were allocated to a smallholder, the returns to labour would be less than USh 500,000 per ha when growing low-value cash crops such as maize or beans, and less than USh 1 million per ha when cultivating high-value cash crops such as passion fruit or ginger. This does not mean that it would be wise to neglect smallholder agriculture and focus entirely on large-scale floriculture. Peasant farming is important to household food security, even to people working on large farms. As mentioned, some of the workers are only employed nine months a year and their job is only guaranteed for one growing season. They need a fallback option and farming is the most feasible.

Ugandan floriculture is practised in a region characterised by high population pressure (2.7 per cent growth per year; MFPED, 1998a). The large-scale commercial farms compete with peasant producers for farmland. Approximately half of the land in

Buganda (Central Uganda) is under the *mailo* system.²⁵ The rest of the land is primarily customary or public land and existing freehold land is mostly church or mission land. In the early 1990s, 60 per cent of the *mailo* land was tenanted (Troutt *et al.*, 1993). Investors who want to start a new flower farm need to buy or lease land but given the land ownership structure in Buganda, they will normally have to deal with owners of *mailo* land who are absentee landlords. Their land is idle or occupied by tenants or squatters. If the land is idle there is no problem, but if the land is occupied, the situation is different. Before the *mailo* owner can sell or lease the land to an investor, he has to evict any tenants or squatters, reducing them to landlessness.

The 1995 Constitution guarantees security of occupancy of lawful and *bona fide* occupants of *mailo* land, freehold or leasehold land (Article 237 (8) and (9)). The 1998 Land Act defines these lawful and *bona fide* occupants.²⁶ Tenants are well protected. The 1998 Land Act states that a tenant on registered land shall enjoy security of occupancy on the land, and that the owner of the land has to give the first option of purchase to the tenant (Sections 32 (1) and 36 (2)). If the tenant and landowner are not able to come to an agreement, the landowner may eventually sell his 'reversionary interest in the land' to another person (Section 36 (7)). This does not mean, however, that the new owner can evict the tenant. Under these circumstances the tenant remains the lawful occupant.

The Land Act is less detailed regarding occupants other than tenants. However, as stated earlier, the Constitution guarantees the security of occupancy of all lawful and *bona fide* occupants, which means that none can easily be evicted. Only occupants who have stayed unchallenged on the land for less than twelve years may have a problem, but

²⁵ The colonial government initiated the 1900 Buganda Agreement whereby all the land of the Buganda Kingdom was divided between the protectorate government on the one hand, and the Kabaka (King of Buganda), his relatives, chiefs and religious institutions on the other. Approximately half of the Buganda land became Crown Land and the other half (8,000 square miles) became *mailo* land (*mailo* refers to the English term 'mile'). The Buganda Agreement thus introduced a system of landholding akin to the freehold system, with some 1,000 people as landlords and the majority of the Buganda population as tenants (Nsabagasani, 1997; Muhereza, 1998).

²⁶ The 1998 Land Act states that a person entering the land with the consent of the registered owner is a lawful occupant, and so is a person who had occupied land as a customary tenant but whose tenancy was not disclosed or compensated for by the registered owner at the time of acquiring the leasehold certificate of title. A person who, before the coming into force of the 1995 Constitution, had occupied and utilised or developed any land unchallenged by the registered owner for twelve years or more is a *bona fide* occupant (Section 30 (1) and (2)). A tenant by occupancy is a lawful occupant who is known by the registered owner as a tenant. He has to pay the owner an annual ground rent (Section 32 (2) and (3)).

they are entitled to invite a mediator appointed by the Land Tribunal to assist in negotiations (Section 31 (3)).

According to law, tenants and long-term squatters are well protected.²⁷ Daily practice may, however, differ somewhat from the law. Nsabagasani (1997) states that after the 1995 Constitution was in place, evictions went on unabated. He also refers to the Land Commission that has to play a central role under the 1998 Land Act. By virtue of appointment, the commission is top-down and does not reflect any local representation. There is, therefore, no guarantee that it will not be involved in corruption, manipulation and the inefficiencies experienced with former land-related state organs.

Even when occupants are well protected, increasing pressure on land may lead to more landlessness. A landowner wanting to sell an occupied plot to a large commercial farmer can offer the occupants compensation in return for evacuating the land. The Constitution and Land Act are based on the idea that peasants act rationally and will not accept such compensation. They will not sell their access to land because they depend on the land for their livelihood. This argument no longer holds. Peasants do sell their rights (Nyamugasira, 1996) to obtain cash for school fees, medical bills, legal fees, bride price or for starting a small shop and buying consumables. The law thus permits the emergence of landless people by allowing easy and tempting short-term access to cash at the expense of property with long-term income potential (Troutt *et al.*, 1993). The landowners who offer cash in exchange for peasants leaving their land cannot be blamed for this. They are only taking advantage of the opportunities presented to them.

The problem must not be exaggerated. At the moment, all Ugandan flower farms together occupy less than one square kilometre of land. They are not yet causing massive and widespread landlessness among the population of central Uganda, even if tenants and squatters had occupied all this land before (which is not the case). However,

²⁷ The Technical Committee that led the way to the new bill proposed, at an earlier stage, that transactions in *mailo*/freehold land should not be permitted without the consent of the tenant, but that such consent should not be 'unreasonably' withheld. The latter proviso was criticised by Nyamugasira (1996) which stated that it would nullify security of tenure because tenants would be in no position to compensate the landlord. The proviso is no longer present in the final act and is only mentioned in Section 40 (5) where it refers to the consent of the spouse and dependent children of majority age.

further growth of large-sale commercial farming may have negative side effects that should be monitored.

In addition to landlessness, land speculation may be a potential problem. The 1998 Land Act does not put a ceiling on the size of landholdings, nor does it put any conditions on the use of land. Bazaara (1994) states that an unregulated market will concentrate land in the hands of speculators. The growing pressure on land and the increase of large commercial farms in central Uganda may indeed foster land speculation. Investors will look for serviced land along the tarmac roads to Entebbe, Kampala and around Lake Victoria. Land speculators will try to get hold of such land for future sale or lease and will try to appropriate communal land or to purchase land from *mailo* owners. The land should preferably be idle and until it is sold it will not be utilised.

The present area under flowers is far too small to have caused massive land speculation but further growth of large-scale commercial farming may change the situation. In addition to landlessness, land speculation is a potential problem to be recognised and monitored.

So far the land question has been considered from the communal point of view but the flower farmers' point of view also needs evaluating. A Ugandan citizen who wants to go into flower farming can buy or lease land but a foreigner (non-citizen) can only lease land.²⁸ According to the 1998 Land Act, a lease shall not exceed ninety-nine years (Section 41 (3)), but this is not a problem. An investment will have to repay itself much more quickly in any case.

Once the flower farmer has received all official documentation and fenced off his newly acquired idle land, he will not be bothered with the land question anymore. But before this point, many things may go wrong. One possible problem is uncertainty about the ownership of land that is offered for sale or lease. The land market in Buganda lacks transparency because of the complexity of the *mailo* system. *Mailo* tenants often claim to be the rightful owners of the land they occupy but the *mailo* owners reside in towns and do not bother about the land. *Mailo* tenants may offer land for sale to an

²⁸ In the case of a corporate body, neither 100-per-cent foreign-owned companies, nor joint ventures with a local partner with a minority share are allowed to acquire land (Section 41 (7) (b)).

investor who, thinking that he is dealing with the legal owners, pays for the transfer of non-existing rights. When the real owner turns up later on, the investor has to pay for the land for a second time (Nsabagasani, 1997).

Slow bureaucratic procedures cause additional problems. When the investor has found a suitable piece of land and a willing seller it can still take years before the land title or the official leasing certificate is handed over (EPRC, 1997). Purchasers prefer to wait to start investing in a farm until all the papers have been arranged and the investment is secure. However, in the meantime new squatters may settle on the land, either because they have been evicted from another farm and have nowhere else to go, or because they hope to be compensated for leaving when the actual development of the flower farm starts. The latter reason for moving in is especially attractive when it is known that the investor is a foreigner (who in the eyes of the squatters is, by definition, rich).

An investor who has struck a deal with a landowner will also be taken aback when the owner who has promised to take care of occupants (tenants or squatters) turns out not to have done anything. If the investor has already paid (part of) the money to the owner, he has no alternative but to deal with the people himself. Negotiations with occupants over compensation payments can be time-consuming and stressful. One of the questions is how to define compensation. The economic definition of compensation states that the loss to the occupant is the market value of the occupant's interest in the property. The value can be estimated by calculating the replacement costs of structures and other land improvements, the value of standing crops and the capitalisation of future net returns from use of the land. This last point can be the subject of extended debate. Assumptions on future yields and discount rates determine the net present value to the occupant. To avoid these technical discussions, the level of compensation can also be based on actual market values. This will, however, only work when at least some of the parcels in the market have similar characteristics to the parcel to be valued (Troutt *et al.*, 1993).

If the investor and the occupants cannot come to an agreement, the land dispute has to be solved through external mediation. In the past, clan heads and elders acted as arbitrators in land disputes in Buganda, but they have lost their influence and almost all cases are forwarded to the formal agencies of dispute settlement. Until 1998, Resistance Committees (RC) courts were supposed to handle land disputes but they did not keep

proper records of proceedings and judgements. Committee members were demoralised because of a lack of incentives, and some were ignorant of the prevailing land tenure law (Kigula, 1993). Following the 1998 Land Act, District Land Tribunals took over the function of the RC courts (Section 77) but the establishment of these tribunals has been delayed by lack of money. Judging from past experiences, it seems advisable for investors to try to settle land disputes outside the judicial system whenever possible.

The problems that flower farmers may face when buying land can be summarised by an example mentioned by Ssali (1996):

‘JH Floriculture Growers Ltd has for the last 2 years been struggling to get more land for expansion, but has failed to evict squatters from the piece of land it bought about 3 years ago. Legal barriers together with corruption of Local Council (LC) officials and the police have led to resource wastage in form of fines, lawyer’s fees, not to mention time waste and the benefits that would have been accrued from increased production’.

The flower farm is Ugandan owned, which shows that not only foreign companies face such problems.

The land question has two sides. On the one hand there is the danger of eviction of tenants and squatters; and on the other there is the trouble investors may face when starting a new flower farm, which should not be forgotten. After all, the Ugandan government is promoting non-traditional export crops including flowers. Investors could hesitate about going into floriculture because of the problems they may face with regard to land acquisition.

2.4. Water: pro-active policies while waiting for NEMA

Flower farms use water which can at times be scarce, and they use agrochemicals which can pollute surface or ground water. First, the scarcity aspect. Floriculture requires water for irrigation that is pumped from rivers, swamps and lakes. Fortunately, Central Province of Uganda receives a lot of rain (over 1100 mm/year) and borders Lake Victoria. Potable water may sometimes be in short supply, but irrigation water hardly ever is. Moreover, all flower farms use drip irrigation that minimises water use. There

are no reports of falling ground water levels, streams drying up or shrinking lakes as a result of water use by flower farms. The situation is clearly less critical than in Kenya.²⁹

At present, the supply of water for irrigation by Ugandan flower farms is not a problem but the situation is slightly different regarding the pollution of ground and surface water. The farms are close to environmentally sensitive areas such as wetlands³⁰ and Lake Victoria, and handle large quantities of more than 100 different agrochemicals, some of which pose a potential threat to water sources and ecosystems (NEMA, 1999). Fertilisers, insecticides and fungicides are applied to stimulate growth and control pests and diseases. However, most of the chemicals used in the rose industry are easily degradable (ADC/IDEA, 1996b) and internationally banned chemicals are not used. All agricultural chemicals are subject to evaluation by the Crop Protection Department of the Ministry of Agriculture, which follows the FAO international code of conduct on the distribution and use of pesticides. Flower exporters require phytosanitary certificates, and have to declare flowers to government plant inspectors at Entebbe airport for verification.

Until recently, methylbromide was used to fumigate prior to (re)planting, but it has been replaced by beasamide. Both are toxic to humans but beasamide is biodegradable while methylbromide is not. The alternative method of steaming has been considered by the flower industry, but it is relatively expensive because of high fuel costs.

Agrochemicals are usually applied in the correct amounts. If the correct amounts of insecticides and fungicides are sprayed onto the plant, most of these chemicals are absorbed by the plant tissue. If the correct amounts of fertilizers are added to the irrigation water, accumulation of access salts in the soil is minimised (Kaija, 1999). In 1996, chemical pollution was reported on some of the flower farms (ADC/IDEA, 1996a) but it was not certain whether and to what extent these chemicals ended up in

²⁹ Environmental conditions in Kenya are different. The discussion about 'excessive' use of water by Kenyan flower farms focuses especially on Lake Naivasha which is situated in a dry land area and the flower farms around the lake are much bigger than Ugandan flower farms. (The biggest, Sulmac, has 200 ha under production and the total area under production around the lake is 600 ha.) The water level of Lake Naivasha was declining until 1997 when excessive rains as a result of El Niño temporarily reversed the process. The Kenyan flower farms are not the only reason for the previous decline in the lake level. Evaporation and water supplies to Nakuru Town are also factors of importance.

³⁰ The farms are not located inside wetland areas because roses need well-drained areas (ADC/IDEA, 1996a).

nearby streams, rivers, swamps or in Lake Victoria. More recent reports do not mention chemical pollution at all.

Precautionary measures with regard to the environment differ from one farm to another, as is the case with labour safety measures. The farms that hope for MPS certification are the most advanced and have concrete floors where chemicals are loaded for spraying and sunken tanks to catch chemical spills. The tanks contain absorption materials such as charcoal, sand and soda. Once a year the contents are bagged and then buried. Empty chemical bottles are also disposed of according to fixed rules.

The flower farms that are less advanced do not employ such measures. The managers may either be ignorant of the dangers, or the owners may not have the money to invest because their farms are running at a loss.

The 1995 National Environment Statute empowered NEMA to establish measures to protect the environment. Implementation of the Statute is, however, proving to be a long drawn-out process, which involves drafting technical guidelines, regulations and measures that each has to follow participatory consultative and approval procedures. NEMA has already developed standards for water quality and for the discharge of effluents and waste into water and on land. The NEMA Board of Directors, and the Policy Committee on the Environment have approved the 1998 Effluent Standards Regulations and the Waste Regulations, and they are both expected to become law in the near future (NEMA web site, September 1999).

NEMA has also issued a list proposing the maximum permissible limits for 52 chemicals and minerals. Effluent or waste water containing any of these listed elements should be pre-treated. The proposal has been the subject of intense public debate. NEMA's activities are underpinned by stringent laws. Under Ugandan law, any person who pollutes the environment or leads another to do so, is committing a criminal offence that could lead to imprisonment for up to 18 months, and a fine of up to US\$ 18 million (*The East African*, 31 August - 6 September 1998).

The Ugandan government takes environmental issues seriously. NEMA is working hard to develop environmental standards and regulations which will also apply to the Ugandan flower industry. Enforcement of standards and regulations will be the next step. Until now, flower farms have not been systematically subjected to environmental controls by NEMA. However, the sector is developing its own

regulations and UFEA has, for instance, asked every flower grower to dig a trench between their greenhouses and nearby swamps. The run-off in this trench is supposed to be tested periodically for possible contamination (Kaija, 1999). UFEA, in collaboration with Makerere University, is also organising periodic in-service training for farm supervisors to teach them about proper pesticide use, first aid, etc.

NEMA would like to deal more intensively with the flower growers, but it does not have the manpower to enforce new regulations in each sector of the economy simultaneously. Priority is being given to industries that are known to be major potential polluters, especially in terms of discharging effluents (sugar factories, textile industries, breweries, hides and skins tanning, oil and soap factories, and meat, fish and milk processing plants; NEMA, 1999) (see Section 5.4 on tanning). Floriculture is not included in this group which is a positive sign for the industry.

Because NEMA does not actively enforce regulations, some flower farmers tend to ignore new directives. This is not always intentional. Not all of NEMA's changes are widely disseminated and in many cases flower farmers are not aware of the latest regulations.

2.5. Code of practice

Fortunately, environmental management in the flower industry is not only determined by national laws and regulations. The majority of the flowers are destined for EU countries which have their own list of prohibited pesticides. European consumer organisations and European flower growers' associations also monitor levels of pesticide use in Uganda and elsewhere in Africa. Consumers are concerned with their own consumers' safety (e.g. chemical residues on flowers), while the growers are driven by self-interest (arguments to stop flower imports). Ugandan flower farmers have to be proactive in this respect, like their counterparts in other African countries. If a European consumer organisation or growers' association reports in the local press that Ugandan flower farmers are using forbidden or excessive levels of pesticides, this will be reflected in European consumer preferences and the demand for Ugandan flowers will fall.

European consumers are not only concerned with environmental aspects of flower production, but also with the labour conditions on flower farms. The Kenyan flower industry has already experienced this concern several times. In the 1980s a German consumer organisation threatened to boycott Kenyan flowers because the labourers on the Kenyan farms were thought to be not properly protected during the spraying of flowers (Dijkstra, 1997). In 1998 Kenyan flower farmers had to counter negative press reports in Europe about water-borne diseases and pesticide poisoning among their workers (*The East African*, 7-13 September 1998). The flower farmers denied some of the allegations but the damage had already been done.

A flower industry that has to be pro-active with regard to environmental and labour standards benefits from a code of practice. Kenyan flower farmers have set the trend in Africa. Two locally developed codes are in use in this country: a 'Code of Practice' developed by the Fresh Produce Exporters' Association of Kenya (FPEAK),³¹ and a 'Code of Conduct' developed by the Kenyan Flower Council (KFC).³² UFEA and HORTEXA have also developed a code of practice that was ratified by UFEA in September 2000. As a result, any flower exporter who wants to be a member of UFEA has to adhere to the code.

The Ugandan code of practice is based on a Harmonised Generic Framework for African Codes of Practice. At the moment, trade associations in Kenya, Uganda, Tanzania, Zambia and Zimbabwe are participating in the development of this harmonisation effort. Like existing national codes, the framework aims to ensure the well-being of workers and outgrowers in the horticultural industry, preserve environmental integrity, and safeguard consumer health. The harmonised generic

³¹ FPEAK comprises some 160 horticultural growers and exporters. Participants in the voluntary Code of Practice programme agree to export only Category 1 produce and to meet improved standards of staff employment, chemical use, product traceability and environmental protection. An independent organisation, Society General de Surveillance (SGS), inspects applicants when they apply and periodically after they join the programme. SGS uses random tests and site visits to check for pesticide residues on export products and verify correct management procedures (*Floriculture International*, December 1996).

³² The Kenyan Flower Council has 22 members who together are responsible for more than half of Kenya's total flower production. New members have 12 months in which to attain primary standards. These include farm management responsibilities, good agricultural practices, safe and effective use of pesticides, workers' welfare (good wages, free medical treatment) and protection of the natural environment. An independent inspection authority, Bureau Veritas, serves as external auditor (KFC website, September 1999). KFC's Code of Conduct aims for higher environmental and labour standards than FPEAK's Code of Practice.

framework serves as a basis for national codes and provides a co-ordinated and controlling function to ensure that separate codes apply the commonly defined objectives, core criteria and minimum requirements, as well as the auditing guidelines. National associations can formulate additional requirements for their national codes beyond those defined by the harmonised scheme (COLEACP, 1998).

UFEA has modified the generic framework to suit the Ugandan situation. It had problems with, and subsequently removed, the clause stating that 'no fertiliser (organic or artificial) shall be used within the direct vicinity of channels, rivers, swamps, lagoons or potable water sources'. All flower farmers tend to be located in the vicinity of natural water bodies, and this rule could have implied that none of them would be allowed to use fertilisers anymore.

2.6. Land, labour and water conditions summarised

African flower farms are often criticised by European competitors for (1) occupying scarce land that could be used for food production, (2) consuming scarce water, (3) exploiting labourers and (4) polluting the environment. However, in the case of Uganda some, if not all, of this criticism is untrue. The farms only occupy a tiny part of all arable land and their water consumption does not cause problems. The per-hectare returns for the workers are substantially higher than on smallholdings. The workers are generally paid well, the fringe benefits are attractive, and the issued safety measures are normally up to standard. The farmers are developing measures to protect the environment, and the sector is pro-active as it develops its own code of practice and organises in-service training for farm supervisors.

What remains is a difference in performance between trendsetters and laggards. The latter category of farmers is slower in improving labour conditions and implementing safety measures that aim to protect workers and the environment. However, the laggards often delay their efforts due to money-related pressures. Many Ugandan rose farmers are in financial trouble because they started with tea hybrid varieties instead of sweetheart roses. Their primary goal is survival. Once this has been realised they may then think about further improving their performance.

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3. Fish

3.1. The rise of the industry

Lake Victoria is one of the largest fresh water bodies in the world. The surface area (69,000 km²) is shared by Uganda (45%), Tanzania (49%) and Kenya (6%). Over the last two decades, these three countries have developed into major exporters of Lake Victoria fish. Interestingly, almost all the exported fish are of a non-native species, notably Nile perch (*Lates niloticus*). The British stocked the lake with Nile perch in the early 1960s, after introducing another non-native species, Nile tilapia (*Oreochromis niloticus*) in the 1950s.³³ Their main objective was to establish stocks of commercially valuable species that were capable of exploiting untouched stocks of smaller fish.³⁴ The introduced fish did very well but this turned out to be a mixed blessing. Together with overfishing, the predatory activities of the Nile perch contributed to the depletion of

³³ Nile perch and Nile tilapia are indigenous to Lake Albert.

³⁴ The Nile perch was first introduced in Lake Kioga to replace depleted stocks of native fish. In the mid 1950s it began appearing in commercial catches in Lake Victoria. British anglers are thought to have slipped the Nile perch into the lake for sport. Once there, British officials decided to actively stock the lake with Nile perch in the early 1960s.

many species previously found in the lake.³⁵ At the same time, the introduced fish led to unprecedented catches, stimulating vibrant commercial fisheries that yielded significant socio-economic benefits to the peoples of the riparian states (Okaronon, 1994). In the 1980s it became clear that Nile perch sold very well on the European market and that a new, badly needed source of hard currency had been found.

Traders who ventured into the export of Nile perch did not have to go into fishing themselves, but could rely on an already highly commercialised local fishing industry. The commercialisation of Lake Victoria fisheries started way back in the pre-colonial period when fishermen embarked on barter trade with neighbouring groups. In the colonial period, commercial fishing was boosted by the introduction of western manufactured fishing equipment (1905), outboard engines (1954), and non-native species. The promotion of cash crops by the colonial administration gave rise to a growing group of consumers with money, which in turn increased the demand for fish (Asowa-Okwe, 1996). A capitalistic mode of production developed, with owners of fishing boats and equipment on the one hand, and labourers on the other. The owners did not fish themselves. When the labourers off-loaded their catch, the owners would come to the beach to sell the fish to fishmongers. The labourers received 5 to 10 per cent of the value of the catch.

After independence, this system did not basically change, and traders who wanted to become involved in Nile perch exports in the 1980s were able to use it to their advantage.³⁶ They did not have to invest in fishing boats and equipment but could take their trucks to the beaches instead and deal with ‘the fishermen’, i.e. the boat owners. They could order from them in advance, thus securing supplies, and could also ask them to collect Nile perch from fishermen at not easily accessible landing sites, e.g.

³⁵ The once widespread haplochromine taxon no longer featured in commercial Ugandan catches by 1979 (Okaronon, 1994). Over 200 haplochromine species disappeared (Okedi, 1998). The lungfish and catfishes, which formerly contributed significantly to commercial landings, had declined to a minor commercial species by the mid 1980s (Okaronon, 1994). Similar changes took place in the Kenyan and Tanzanian parts of the lake. Haplochromines and the native tilapiines *Oreochromis variabilis* and *Oreochromis esculentus* were essentially extinct (Ochumba *et al.*, 1994; Nyirabu, 1998). The Nile perch was not the only one to blame. Commercial trawling of haplochromines on the Tanzanian side of the lake in the 1970s, for instance, contributed to the disappearance of the haplochromine species.

³⁶ For more details on labour in the domestic fishing industry see Asowa-Okwe (1996), Kibwika (1994), Asiimwe (1994) and Nyakaana (1994).

on the beaches of the Ssese Islands. With a guaranteed supply, exporters were able to put all their energy into processing and exporting.

Processing was essential. To get the Nile perch past EU customs, the fish had to be headed, gutted and filleted. For this purpose, the exporters built modern processing plants along the shores of Lake Victoria. The processed fish had to be either chilled or frozen and then packed and taken to the airport by refrigerated or insulated truck to be flown to Europe without delay.

The fish exporting industry developed first in Kenya. Uganda and Tanzania followed the Kenyan example and Uganda's first fish processing factory, the government-owned Uganda Fisheries Enterprises Ltd, started operations in 1990.³⁷ Green Fields Ltd followed in 1991 and Gomba Industries in 1992. Then, increasing numbers of fish processing factories opened. Between July 1991 and July 1994 total investments amounted to US\$ 14 million. Investors were attracted by good export prospects, an improved investment climate in the country, and deteriorating investment opportunities in Kenya. Kenyan (Asian) firms built or acquired partner firms in Uganda and Tanzania to escape political uncertainty in their home country and to obtain better access to the Lake Victoria fishery resources (World Bank, 1996).

By 1996, Uganda had 11 industrial fish processors, exporting US\$ 46 million worth of fish and fish products (Table 3.1). These exports represented 7 per cent of Uganda's total exports (UBS, 1999). The European Community was by far the most important destination and in 1996, it imported 85 per cent of all Uganda's exported chilled fish products, and 24 per cent of frozen products (NEMA, 1999). The Netherlands, Belgium, and the United Kingdom were the biggest European importers of Ugandan fish. Outside the EU, only Australia and Israel were major consumer markets (UIA, 1998).

Not only Uganda, but also Kenya and Tanzania depended heavily on the EU for their fish sales. In the second half of the 1990s it became clear that this was a dangerous

³⁷ Initially, Uganda Fisheries Enterprises produced frozen fish and cold-smoked fish fillets but it was unable to find a market for its cold-smoked fillets and stopped producing them. In 1992, the company started exporting chilled in addition to frozen fish. In 1996, Uganda Fisheries Enterprises was privatised and renamed Masese Fisheries Ltd.

situation. Within eighteen months, three successive bans hit the East African countries, as is explained below.

Table 3.1. Exports of fish and fish products from Uganda, 1981-1999

Year	Quantity (tons)	Value ('000 US\$)	Year	Quantity (tons)	Value ('000 US\$)
1981	n.a.	0	1991	4,687	5,313
1982	n.a.	0	1992	4,851	6,498
1983	n.a.	0	1993	6,138	8,943
1984	n.a.	16	1994	6,564	10,403
1985	n.a.	2	1995	16,046	32,262
1986	n.a.	11	1996	14,075	46,251
1987	n.a.	3	1997	11,819	27,864
1988	n.a.	24	1998	13,346	45,350
1989	n.a.	143	1999	9,628	24,837
1990	1,664	1,386			

Sources: Values between 1981 and 1989: MFEP (1994); quantities and values 1990 to 1997: UBS (1999); quantities and values 1998 and 1999 (provisional): MFPED (2000).

3.2. First and second bans: February 97 - June 98 ³⁸

In February 1997, the Spanish Veterinary Authorities detected salmonella microbes in consignments of fish originating from East Africa. The Spanish government acted swiftly and imposed a temporary ban on all fish products from the region (the first ban). The European Commission reacted in May by imposing a compulsory check for salmonella on Nile perch from Uganda, Kenya and Tanzania. Consignments were only released after the results of the test were known. Salmonella had to be completely absent both in chilled and frozen fish. Fortunately, checking was done through DNA testing. This method was fairly quick and having been released, the chilled fish were still fresh enough to be sold.

An EU inspection team of the Food and Veterinary Office (FVO) visited Uganda in May to check on hygiene standards in the fishing industry. The inspectors aimed at

³⁸ Unless otherwise mentioned, the history of the three fish bans is based on interviews with people in the fishing industry and articles in *The New Vision* and *The East African*.

evaluating compliance with EU requirements as stipulated back in 1991 in Council Directive 91/493/EEC. This directive laid down the required sanitary conditions and procedures to be followed by both third countries and EU member states which wanted to put their fish products on the EU market.

The EU inspectors detected severe deficiencies. Fishing boats lacked cooling facilities, and fish were off-loaded on beaches under poor conditions. Hygiene measures at fish processing factories were thought to be below standard, resulting in cross-contamination from workers and fish to fillet. The factories were still a long way from qualifying for ISO-9000 certification, the standard for quality management in Europe.

The East African fish exporters initially only received a warning to improve their hygiene standards but towards the end of 1997 a cholera epidemic broke out in Kenya, Tanzania, Uganda and Mozambique as a result of heavy rains caused by El Niño. The cholera outbreak coincided with the return of the EU mission that went to check on improvements in the fish exporting industry in December 1997. The inspectors were worried about possible contamination of exported fish with cholera-causing microbes (*vibrio cholerae*). They recommended a ban on all fresh and frozen fish from the four cholera-infected countries.

The ban took effect on January 6 1998 (the second ban following the first ban by Spain). A few days later, the ban was relaxed to allow fish consignments into the EU after being tested for cholera. This condition amounted to a ban on the importation of chilled fish. Like salmonella, cholera can be detected very quickly through DNA testing, but not all EU member states accepted this method of testing. A conventional test was prescribed that required four to five days. However chilled fish do not stay fresh that long.

In Uganda, 80 per cent of the Nile perch exported to the EU concerned chilled fish. The ban therefore forced processors to scale down operations drastically. Working days were reduced, and processors who had specialised in chilled fish laid off workers or suspended operations altogether. The value of fish exports declined from an average of US\$ 1 million a week to between US\$ 75,000 and US\$ 100,000 a week.³⁹ Fishermen

³⁹ In Tanzania fish exports declined by some US\$ 140,000 to US\$ 170,000 a week. Figures for Kenya are not known.

dumped fish they could not sell to fish processors onto the local market. As a result, selling prices at these markets declined from US\$ 900-1,000 per kg to US\$ 500-600 per kg, drastically reducing the fishermen's incomes. The only people to benefit were local consumers.

On July 1 1998 the cholera test was no longer considered necessary, and the ban on chilled fish was lifted. Many processors had used the previous six months to invest heavily in order to improve hygiene standards. Fish collectors used insulated boats and delivered their supplies to exporters at newly built landing platforms. The exporters supplied the collectors with ice, and processing lines in factories were improved to avoid cross-contamination. Returning EU inspection teams concluded that Kenya was still performing poorly, while Uganda was doing better and Tanzania the best. Tanzania was promoted to List I, meaning that the policy of all member states towards fish imports from Tanzania was harmonised. Uganda and Kenya were put on List II, which showed that they had made progress and, for the moment, were given the benefit of the doubt.

As a List II country, Uganda did not have the advantage of a harmonised EU policy. It had to negotiate on a bilateral basis with EU countries about access to their markets. Spain was the most difficult to convince. It did not allow imports of Ugandan and Kenyan fish, arguing that the health risks were still too great. African producers felt that Spain was trying to protect its own fishing industry, which in previous years had found it difficult to compete with growing imports of Nile perch from East Africa.

Although Uganda was improving conditions, its export position was still far from secure. In November 1998 the EU undertook a third EU inspection mission to Uganda to monitor the progress made. Based on the results of this mission only five of the eleven existing processing factories were allowed to continue exporting to the European market.

3.3. Third ban: March 1999 - August 2000

While fish exporters did their best to improve their performance, other developments in the fish sector were about to nullify all the progress made. A new fishing technique was

gaining popularity among fishermen dealing with tilapia: fish poisoning. The first incidents of fish poisoning in Uganda had already been reported back in 1996, on islands near the Kenyan boarder. Because of the location of these islands, Ugandan policy makers believe that the new fishing approach originated in Kenya. Others are not sure about the source of the trouble and felt it could have come from Kenya, Tanzania or Uganda itself.

The reason for the new fishing technique was clear. Fishermen were reverting to 'chemical fishing' because of declining catches due to a depletion of the lake's fish resources. In Uganda alone, the number of fishermen had increased from 2,000 in 1986 to 17,000 in 1996 while the average catch had fallen from 84 kg in 1988 to 26 kg in 1996 (Kazooru and Muramira, 1998). Initially fishermen had reacted by using finer-mesh nets. They used 87.5 mm (3.5 inch) gill nets instead of 125 mm (5 inch) ones to catch tilapia, and seines of 5 mm mesh size instead of 10 mm to catch mukene (NEMA, 1999). All this was illegal, but the law was not effectively enforced. Fishermen also continued to practise beach seining although the government had banned this method of fishing. The decreasing mesh size in mukene fishing led to an increased catch of young Nile perch and tilapia, while the use of beach seines destroyed the breeding nests of these two species. The result was a further decline in fish stocks. Some of the fishermen then tried a more drastic approach, namely poisoning.

Various poisoning techniques were reported. One concerned the use of small polythene bags. Fishermen filled the bags with a concentrated liquid poison, usually an insecticide bought at a local shop selling agricultural inputs.⁴⁰ Once out on the lake the fishermen made small holes in the bags and threw them in the water. The poison mixed with the water and intoxicated the fish. The fishermen could then easily harvest the fish as they floated on the surface of the water. Another poisoning technique concerned the use of buckets instead of polythene bags. Fishermen diluted the concentrated poison in a bucket and then poured the contents into the lake. The effect on the fish was the same. To make the exercise more efficient, some fishermen put a net around the area where

⁴⁰ One of the agrochemicals widely used was Endosulfan, a highly poisonous broad-spectrum insecticide commonly marketed as Endotaf (r) 35 EC and Thiodan 35 EC (NEMA, 1999).

they intended to pour the poison and fish that tried to get away from the poison were also caught.⁴¹

The poisoning was carried out in shallow waters where it was most effective. The fishermen targeted tilapia, which breeds in these areas in known locations. The exercise was often carried out at night to avoid unwanted attention. In addition to tilapia, the fishermen would catch immature Nile perch. All poisoned fish were destined for the domestic markets as fish exporters require mature Nile perch for good fillets. Mature Nile perch live in deep water where chemicals are less effective.

In 1998 the Ugandan government decided to get tough on chemical fishing. It revised the Environmental Pollution Act to allow for the imposition of stiffer penalties on those caught committing offences. People could be jailed for seven years or receive a fine of US\$ 5 million for poisoning fish. Fishermen had to have a licence, and fishing at night was forbidden. Monitoring appeared to be a problem and many fishermen continued without a licence. The government also lacked boats to patrol the lake. The situation was no different in Kenya or Tanzania. Fishermen who used chemicals played hide and seek with the authorities while continuing their practices.

Although fish poisoning was an issue in 1998, it was not affecting local consumption or exports. Things changed, however, in March 1999 when three Kampala residents died after eating fish suspected of having been caught by poisoning. Local fish consumption came to a halt, and the Ugandan government announced a temporary ban on all fish exports. The self-imposed ban included exports of Nile perch to the EU. Although mature Nile perch were not caught by chemical fishing, the Ugandan government was afraid that EU inspectors would find traces of chemicals anyway. After all, Nile perch eat smaller fish that might in turn have swallowed chemicals (the so-called bio-accumulation of chemicals).⁴² The country's recently improved reputation was at stake.

The Ugandan ban was supposed to last only a few weeks but it had, however, an undesired side-effect. It attracted the attention of EU bureaucrats who followed Uganda's example by imposing a ban on all fish from Uganda, Kenya and Tanzania on

⁴¹ In Tanzania another variation was observed. Fishermen used clay balls filled with pesticides and threw the balls between their gill nets and the shore (Bugenyi and Van der Knaap, 1998).

⁴² Endosulfan is one of the chemicals used that bio-accumulates.

March 30. The East African fish exporters were back to square one, but this time the cause of the problem was beyond their direct sphere of influence.

The impact of the second EU ban was bigger than that of the first one. This time the target was not only chilled but also frozen fish. Prior to the ban some 70 per cent of fish exports from Lake Victoria were destined for the EU. New markets were not readily available and during the first week of the ban, Uganda alone lost between US\$ 800,000 and US\$ 1 million in anticipated export earnings. The Uganda shilling depreciated sharply because the ban coincided with a decline in tourism after the killing of a number of tourists in Bwindi National Park.

The price of landed Nile perch decreased from USh 1,500 per kg to USh 300. Fishing boat owners kept their boats ashore, thus making their fisher-labourers jobless. Exporters scaled down operations, sending their workers home on indefinite, unpaid leave. Many exporters had invested heavily during the previous year to upgrade their factories and meet EU standards but now, due to lack of production, they could not service their loans.

The only positive aspect was that exporters were forced to explore new markets. Japan, South Africa and the United States became more important destinations, and export possibilities to countries like Egypt, Australia and China were investigated. The redirected exports did not compensate for the lost EU market. Moreover, not all the new destinations were happy with the growing imports of Lake Victoria fish. Two months after the EU, Zanzibar followed with a similar ban. According to the Ministry of Agriculture, the ban was to protect consumers, including tourists, as well as the island's economy. The latter argument probably referred to local fishermen who found themselves competing with the increasing shipments of Nile perch and tilapia.

In August 1999 an EU inspection team came to check on progress in the East African fish industries. In Uganda the team welcomed the measures the government had taken. The district fisheries staff were back in operation, patrolling the lake. Fishermen were only allowed to land fish during the day and at recognised landing sites. Each landing site had its own fisheries field staff who inspected the catch and took samples. The Uganda Fisheries and Fish Conservation Association (UFFCA), with assistance from the Ministry of Health, had developed a fish-poisoning identification poster that was distributed to all landing sites.

The government had also formed local fisheries management committees that supervised the landing of fish and looked for indications of poisoning.⁴³ The committees were serious in their work and proud that the government had entrusted them with the job. The local communities supported them because everybody was feeling the pain of the EU ban. The community-based approach was quite effective in eliminating chemical fishing.

In spite of all the measures taken, the EU inspectors were still not satisfied. Doubts remained about the quality of inspections at the landing sites. Moreover, the laboratories that had to test the fish samples for pesticide residues were found to be lacking the necessary equipment and their documentation was incomplete. The EU team concluded that the ban should not yet be lifted, and came to the same conclusion in Tanzania and Kenya.

The Ugandan government reacted by re-training the local fisheries officers and by looking for funds to reconstruct and re-equip the national laboratory. A Ugandan subsidiary of the Belgian firm Chemiphar Ltd also built a new laboratory in Kansanga that started operations in November 1999. It required EU accreditation, but this was relatively easy because the Belgian authorities had already accredited it. The government preferred, however, to send collected fish samples to Europe for analysis.

In December 1999 the EU lifted the ban on fish from Tanzania, but not those on fish from Uganda and Kenya.⁴⁴ This time the arguments centred around the monitoring and control structures in the three countries. The fisheries department in Tanzania was thought to be competent in supervising the industry, while the fisheries departments in the other two countries lacked direct control.

In Uganda there were two reasons for this. First, the Fisheries Department was responsible for fish inspections, but the Uganda National Bureau of Standards (UNBS) was responsible for fish quality assurance. The UNBS is part of the Ministry of Trade, Tourism and Industry. Second, the Fisheries Department was supposed to monitor and maintain standards at fish landing sites, but the sites were controlled by the Ministry of

⁴³ Poisoned fish can be recognised by its greenish colour, swollen stomach and loose body scales. The fishermen often have an unusually large catch, including young fish.

⁴⁴ Tanzania resumed its exports in the first week of February with direct flights from Mwanza airport to Europe.

Local Government. According to the EU, the Fisheries Department's lack of direct control encouraged bureaucratic delays in implementing quality improvements.

It took the Ugandan government some time to streamline quality assurance operations. Initially, the Ministry of Trade, Tourism and Industry was reluctant to drop its final say on fish quality assurance but eventually it had to give in. The ultimate authority on fish quality matters was transferred from the UNBS to the Fisheries Department.

The Fisheries Department drafted a new policy document for the fisheries sector that formed the basis for the new Fish Act. The policy document proposed controlling fishing by shifting from open access to restricted access on all of Uganda's lakes (until now restricted access had only existed for Lake George and Lake Edward in Queen Elizabeth National Park) (MAAIF, 2000). It was, however, not clear from the document how the Fisheries Department would be able to effectively control access to the vast Lake Victoria area if this policy were to be implemented.

On August 4 2000, after another EU inspection mission, the EU fish ban on Uganda was finally lifted. (The ban on Kenyan fish remained in place.) Uganda counted its losses. According to estimates by the Private Sector Foundation, the third ban had cost US\$ 50 million in terms of lost export revenue. Three fish processing plants had closed down, while the remaining eight had operated at 20 per cent capacity. As many as 3,000 direct and 30,000 indirect jobs had been lost.

The ban was lifted but Uganda did not receive the same favourable treatment as Tanzania which had been put back on List I. Uganda was reinstated on List II, which meant that it had to negotiate with individual EU countries about access to their markets. Italy, the Netherlands and Belgium were the first countries to express interest in Ugandan fish. On August 31, the first consignment was air-freighted by Greenfields Ltd to the Netherlands. In August and the first half of September the Ugandan government authorised seven firms to start exporting fish to the EU again.⁴⁵

⁴⁵ Greenfields Ltd, Uganda Fish Packers Ltd, Byansi Fisheries Co. Ltd, Hwan Sung Ltd, Gomba Fishing Industry Ltd, Uganda Fish Masters Ltd, and Ngege Ltd.

The lifting of the ban did not mean that Uganda's battle for access to the EU market was over. List II is a 'temporary list' that expires on December 31 2000. After January 1 only countries on List I will be allowed to export to the EU; while the remaining countries will be forced to withhold exports until they comply with all the necessary requirements for inclusion on List I (Sanz, 1999). When Uganda's ban was lifted the country did not meet these requirements and was therefore put on List II.

3.4. Lessons learnt from the fish bans

The first lesson that can be learned from the fish ban is that the EU is an attractive but difficult market to gain entry to. The potential European demand for Nile perch is huge, but EU import conditions are becoming increasingly stringent. Large investments have been made in Uganda and more will be necessary to reach the hygiene levels demanded. Not only processing plants need to be modernised continuously, but fishermen and fish collectors also needed to be included in the exercise. It is useless investing millions in a processing plant when hygiene conditions in earlier parts of the chain are below standard (e.g. fishing boats without cooling devices).

At the moment, EU conditions only refer to the quality of the product but in future, they will also relate to environmental issues. In addition to the ISO-9000 standard for quality management, the International Organisation for Standardisation (ISO) is developing an ISO-14000 standard for environmental management. It covers issues such as air quality, exhaust emissions, water quality, soil quality, radiation, etc. (CBI, 1996). Sooner or later, East African fish processors who want to export to EU countries will require an ISO-14000 certificate. The industry is advised to anticipate this and national governments can help by updating environmental laws. Uganda has set a good example. It enacted the National Environmental Statute which, among other things, introduced environmental impact assessments, environmental standards, environmental audits, and the principle of 'the polluter pays' (Kazoora and Muramira, 1998). On the basis of this, some fish processors have connected their plants to the sewage main, while others have invested in effluent water treatment equipment.

The third fish ban offers another lesson. East African fish exporters can do their very best to improve their standards but they remain vulnerable to exogenous developments. The Nile perch they exported had not been caught through chemical fishing. The fishermen who used this technique targeted tilapia, which is destined for the local market (and to a limited extent for exports within the region). Nevertheless, the EU banned all Nile perch from East Africa. The processors are able to influence the behaviour of fishermen they deal with, but they are powerless when it comes to fishermen operating beyond their sphere of influence. They depend on the willingness of governments to act.

The only action the fish exporters can take is to lobby for government measures as soon as harmful developments occur. Lobbies are in place and exporters are organised in national associations. These associations have a right to be taken seriously, as fish exports are of major importance to the balance of payments of the countries involved. The depreciation of the Ugandan shilling in the early days of the third fish ban clearly demonstrates this.

The first reports on fish poisoning came to light more than two years prior to the third ban. Could this ban have been anticipated or even avoided if swifter action had been taken? One must be careful here. First, it is normal for governments to lock the stable door after the horse has bolted (e.g. the BSE crisis in the United Kingdom). It is related to the intrinsic slowness of political decision-making processes. Second, not all East African governments acted at the same slow pace. The Ugandan government was relatively early in revising its laws in order to allow stiffer penalties for fish poisoning, whereas the Kenyan government was much later. Finally, law enforcement on and around Lake Victoria is not an easy task given the vast geographical area that has to be covered and the limited resources available to the ministries involved. If anything, the fish-poisoning episode shows that these ministries should be allocated a fair share of the national budget to be able to operate effectively. A fisheries department needs sufficient patrol boats.

Government efforts have to be supplemented by community-based initiatives. Local fisheries management committees are important tools in this respect. They can monitor local practices and discuss and disseminate local innovations. The committees will only be successful in doing so as long as they are truly community based. In Uganda, there is a tendency for such committees to become highly politicised, with local

leaders running the show instead of fishermen. Political interference makes the committees a channel for top-down government directives rather than bottom-up community initiatives. The more the fisheries management committees become associated with the government, the less effective they are in mobilising local support for change.

Proper control of the fisheries sector requires a well-developed monitoring system. The fisheries departments in Uganda, Kenya and Tanzania could develop a HACCP system (Hazard Analysis Critical Control Point system) for this purpose. HACCP systems are widely used in the international agribusiness to manage food safety. The FAO proposed HACCP as a management tool for the Ugandan fisheries sector back in 1995 when the first fish ban was still to be imposed.⁴⁶ The monitoring system has to cover both the domestic and the export chains as history shows that the two are linked in terms of performance.

3.5. The sustainability of East African fish exports

The fish-poisoning affair leads to one more important question, notably about the sustainability of the Lake Victoria fishing industry. As explained earlier, fishermen turn to crude fishing methods such as poisoning when fish catches decline. Smaller catches are a sign of dwindling fish stocks, which suggests that the sustainability of the lake's fish resources is under threat. The problem is that nobody knows how big these stocks are, and, even more important, how many fish can be taken out of the lake without affecting the sustainability of its fish resources. The maximum sustainable yield (MSY) is not known.

In reports, the Ugandan Government mentions an annual MSY of 300,000 tonnes of fish for all Ugandan natural water bodies (NEMA, 1999). This figure is not, however, based on accurate data. The Fisheries Department has set the export of fish at a maximum of 60,000 tons of unprocessed weight, but this is subject to revision when more accurate data become available (Kazoora and Muramira, 1998). In 1996, the

⁴⁶ The seven steps towards a HACCP system are to: (1) conduct analysis, (2) identify Critical Control Points, (3) establish target levels and critical limits, (4) set up a monitoring system, (5) establish corrective action, (6) establish verification, and (7) produce documentation (Hoogland *et al.*, 1998).

eleven Ugandan fish exporters had an approved daily processing capacity of 145 tonnes and a maximum indicated capacity of at least 240 tonnes (UIA, 1998). This equals an approved annual capacity of 45,000 tons and a maximum annual capacity of at least 75,000 tons.⁴⁷ The latter figure exceeds the export limit set by the Fisheries Department and shows that accurate data on maximum sustainable yields are badly needed.

In the year 2000, researchers at the Fisheries Research Institute in Jinja were still trying to estimate the lake's stock of deep-water fish. This information can be used to calculate the MSY for Nile perch. The MSY can then be compared with the present processing capacity in order to decide whether a short-term growth in Nile perch exports from East Africa is desirable.

Harvesting Nile perch beyond its MSY is undesirable because it not only threatens the survival of the fish itself, but also that of other species. Although local consumers prefer tilapia, they also eat Nile perch. When Nile perch becomes scarcer, fishermen who supply the local market will lean more heavily on tilapia. Thus, tilapia stocks will be depleted more quickly (and the chances increase that harmful fishing techniques, such as fish poisoning, are used).

If the present capacity of exporters were much bigger than the MSY, the governments of Uganda, Kenya and Tanzania would be advised to stop giving out licences for new processing plants. Harmonization of policies will be necessary, otherwise investors will just cross the border, as illustrated by the move of Kenyan fish exporters to Uganda and Tanzania in the first half of the 1990s.

The three countries also have to revise their policy regarding the use of trawlers on Lake Victoria. In each of the three countries trawling was forbidden a few years ago because they caught too many immature fish, and, more importantly, destroyed the nets of artisanal fishermen. Interested parties, however, regularly try to get the ban on trawling lifted and illegal trawling takes place, for instance, in Kenya (East African Alternatives, 1999). Trawlers can run far and are difficult to control. If one of the three countries lifts the ban or allows illegal trawling this may affect fish stocks in the entire lake.

⁴⁷ Based on six working days a week.

The Maximum Sustainable Yield, as mentioned above, can be used as a directive for short-term fish quotas. Unfortunately, the MSY is of little use in determining what should be done in the long term. Fish stocks are not only determined by the intensity of fishing but also by other environmental developments. Within the lake region, these developments are generally negative as they destabilise the ecosystem.

One of the problems is the eutrophication of the lake's water, that is the nutrient enrichment arising from agrochemicals, fertilisers and sewerage. Phosphorus and nitrogen inputs have increased threefold since 1950. The nutrients have given rise to a fivefold increase in algae growth since 1960 causing deoxygenation of the water which threatens the survival of deep-water fish (Nyirabu, 1998).

Deforestation, forest degradation, poor farm management and overgrazing in the catchment areas are other threats to the lake's ecosystem. They lead to soil erosion, which in turn causes sedimentation, siltation and, again, eutrophication (Ayoo, 1998; EPRC, 1998; Nyirabu, 1998).

Pollution is another problem. Municipalities and towns in the catchment areas have inadequate or non-functioning waste treatment facilities. Common industries such as tanneries, sugar factories and abattoirs do not treat their effluent water or do so inadequately. Wetlands that used to serve as a buffer zone for filtering the waste water are threatened by (informal) drainage schemes installed to allow agriculture, industry, brick-making and settlements (EPRC, 1998; Nyirabu, 1998).

A final problem that has to be mentioned is the water hyacinth. This fast growing fresh water aquatic weed originated from South America. By 1996 approximately 4,000 hectares of Lake Victoria were covered in the weed (Nyirabu, 1998). It has led to the loss of fishing and breeding grounds, landing sites, and a reduction in the dissolved oxygen content in the water (EPRC, 1998). Control of the water hyacinth is being attempted through manual and mechanical removal, and the introduction of two weevil species from Benin. The bio-control method of rearing and releasing weevils appears to be the most successful. At the Ugandan landing sites the water hyacinth completely disappeared within a very short period of time.

All the problems and developments mentioned here affect fish stocks in the lake either directly or indirectly. In most cases the effects will be negative. Some authors even state that current developments will lead to the death of the lake. Professor Okedi, the Executive Director of NEMA, said: 'Hence it will die and be replaced by a

succession of wetland/terrestrial plants. When will it die? Not within our lifetime but within a fairly short geological time scale' (Okedi, 1998). Even less pessimistic policy makers will have to take into consideration the fact that calculated Maximum Sustainable Yields will only refer to short-term sustainable fisheries. Long-term sustainability can never be assured.

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4. Fresh fruit and vegetables

4.1. From domestic and regional trade to intercontinental marketing

Uganda is well suited to growing fruit and vegetables. Abundant rainfall allows rainfed cultivation, and low-input production is possible thanks to fertile soils. The country has a long horticultural history with peasant farmers having produced fruit and vegetables on their smallholdings for centuries. Part of the harvest is consumed within the household, the surplus being sold at the farm gate and at domestic rural and urban markets. Fruits include cooking banana (*matooke*), cavendish banana (*bogoya*), apple banana (*ndizi*), beer banana (*mbidde*), pineapple, passion fruit, avocado, orange, grapefruit, mandarin, lemon, tangerine, mango, papaya, grape, jack fruit, peach, strawberry and guava. Vegetables include green bean, kidney bean, pigeon pea, cow pea, field pea, lentil, onion, spring onion, leek, garlic, ginger, cabbage, carrot, turnip, celery, mushroom, asparagus, sweet pepper, hot pepper, chilli, okra, tomato, cucumber, aubergine, courgette, lettuce, spinach and other local leafy vegetables.⁴⁸ In 1995 the total area under fruit production was 16,000 ha and the total area under vegetable production 29,000 ha (UIA, 1998). Almost all fruit and vegetables are traded and consumed fresh.

⁴⁸ The distinction between fruits and vegetables presented here is based on UIA (1998).

There are only a few processing factories, primarily producing fruit juices and fruit juice concentrates.⁴⁹

Some fresh fruit and vegetables have traditionally been traded with neighbouring countries. Local exchange between communities on both sides of the border is quite common. Transactions usually remain unregistered and do not appear in national statistics. They include barter trade and exchange on cash basis. In addition to cross-border petty trade, some cross-border wholesale trade takes place, e.g. pick-up trucks transport fresh vegetables from Uganda to deficit areas in Rwanda, and larger trucks carry cooking bananas from Uganda to urban centres in Kenya and Rwanda (Dijkstra, 1997; FEWS, 1998).

In the 1990s, a new class of horticultural businessmen emerged: exporters aiming to sell fresh fruit and vegetables in Europe and the Middle East. The majority of these traders buy their supplies from peasant farmers, although some produce the commodities on their own estates. They are farmer-exporters who have integrated production and the export trade. The farmer-exporters often buy additional supplies from peasant farmers so they can export more than their own estates can produce, or because outsourcing reduces capital requirements.

Some peasant farmers who deliver to exporters and farmer-exporters are so-called contract farmers. They are supplied with seeds and in return promise to sell their crop to the exporter. Sometimes they also receive other inputs and a cash advance but there is no written contract, only an oral agreement. This is often a source of conflict (see Section 4.5). Contract-farmers who produce for farmer-exporters are also called outgrowers.

Exporters do not only get their supplies from contract peasant farmers but also from independent peasant farmers. The latter buy their own seeds and sell to any willing buyer. The farmers and exporters deal with each other in a spot market. The farmer looks for a buyer when his crop is mature, and the exporter looks for supplies when he has an overseas buyer. The farmer has a problem if market supply exceeds market demand, and the exporter has a problem when the situation is reversed.

⁴⁹ The Uganda Investment Authority mentions RECO Industries Ltd (passion fruit concentrate, papain, jams), Britannia Ltd (passion fruit juice) and Elgonia Ltd (pineapple and passion fruit juice concentrates) (UIA, 1998).

The sub-sector is developing steadily. Between 1995 and 1998, export volumes of fresh produce doubled from approximately 800 to 1,600 tonnes (Table 4.1). In the same period, the value of these exports increased from US\$ 0.63 million to US\$ 2.30 million (ADC/IDEA, 1999). Many newcomers tried their luck in fresh produce exports with exporters increasing in numbers from 25 in December 1996 to 81 in December 1998. However, most remained small players. The 18 biggest fresh produce exporters handled approximately 90 per cent of total exports (ADC/IDEA, 1999).⁵⁰ Some are not really export traders but export agents who buy as ordered by certain importers in Europe and receive a commission in return. It is estimated that some 60 per cent of all exports are effected through such agents.

The most important exported commodities are matooke, apple banana, hot pepper, chillies, okra, green beans and passion fruit. Others include ginger, avocado, sweet potato, pineapple, *dudhi* (a kind of marrow), bitter tomato (*ntula*), sugar cane, mango, jack fruit, yam, papaya, aubergine and peas. The prime destination of all fresh produce is the United Kingdom where the main importers are British Asians who target the so-called ethnic market. The traders are primarily based at New Spitalfields Market in North London, where they sell the Ugandan produce to retailers and consumers of Asian, Caribbean and African origin. Most of the importers concerned work with Ugandan export agents rather than independent exporters (see above).

However, not all the fresh produce is handled by Asians and destined for the ethnic market. Apple bananas and passion fruit are also imported by European traders who specialise in exotics for supermarkets. Most of Ugandan's fresh green beans end up in UK supermarkets too. The Ugandan farmer-exporter Mairye Estates Ltd sells pre-packed bobby beans on contract to a major fresh produce importer in the UK, who in turn sells on contract to local supermarket chains.

⁵⁰ ADC/IDEA (1999) lists 15 of them: London Fruit, Mustak Enterprises, Fresh Pack, Sun Trade and Consulting, Fresh Grown, AFI (U) Ltd, Tilda, Ssese Fruit Packers, Rims Ltd, Jaco Commercial Agencies, Fruit Pack Ltd, Free-chem, Coseda Ltd, Mairye Estates Ltd, and Agri-Export. Others include Interfruit, OSU Ltd and Jacksons (U) Ltd.

Table 4.1. Exports of fresh produce from Uganda, 1993-1998 (metric tonnes)

Commodity	1993	1994	1995	1996	1997	1998
<i>Matooke</i> banana	375	462	420	465	451	451
Apple banana	56	87	79	123	144	111
Hot pepper	5	8	8	25	107	236
Chilli	108	96	87	100	92	170
Okra	19	18	16	35	52	110
Green beans	11	18	16	29	72	119
Passion fruit	5	5	5	58	38	30
Others	241	176	162	150	269	353
Total	820	870	793	985	1225	1580

Source: ADC/IDEA, 1999, Table ii.

In addition to the United Kingdom, Uganda's fresh produce is exported to countries such as the Netherlands, France, Belgium and Germany where most of the produce is, again, destined for ethnic markets. Uganda's hot peppers are, for instance, imported by Surinamese traders in the Netherlands and sold to the large Surinamese population there.

Various studies show that Uganda has and will maintain a competitive advantage in the exportation of high-value fruit and vegetables.⁵¹ Domestic Resource Cost ratios are well below one⁵² (ADC/IDEA, 1996; GOU, 1997). However, the road ahead is full of potholes and dangerous bends as will be shown below.

4.2. Fierce international competition

Uganda is not the only developing country trying its luck in the international fruit and vegetable market. The UK market for hot peppers, for instance, is supplied by the Netherlands, Spain, Ghana, Uganda, Gambia, Grenada, St. Lucia, Dominica, Jamaica, Surinam, Brazil and Costa Rica, among other countries (ADC, 1998h). Similarly, the

⁵¹ High-value fruit and vegetables are those with a value per unit of weight in contrast to bulky fresh produce with a relatively low value per unit of weight (e.g. sweet potatoes).

⁵² A DRC ratio presents the domestic resource costs incurred to earn or save a unit of foreign exchange through domestic production and trade at a given exchange rate (total domestic resources divided by total foreign exchange earned).

UK market for okra is supplied by Kenya, Thailand, Gambia, India, Zambia, Zimbabwe, Cyprus, Ethiopia, Mexico, Pakistan, Brazil and Uganda (ADC, 1998o).

Okra belongs to the 'Asian vegetables'. The UK market for Asian vegetables has been served by Kenyan exporters since the 1960s (Jaffee, 1995a). Exporters from other African countries who want to break into this market have to offer either higher quality produce or substantially lower prices than their Kenyan competitors. They have to compete with well-established Asian trade networks that are often based on family connections: some family members stay in Kenya to handle the collection and exports while other family members reside in the UK to deal with importation and distribution (Dijkstra, 1997).

Kenya is not only a major supplier of Asian vegetables but also of purple passion fruit, the type of passion fruit that is preferred in Europe and available for export in Uganda. Other major suppliers of the European market for purple passion are South Africa, Zimbabwe and Burundi (ADC, 1998p). Kenya is also the leading supplier of fine and extra-fine green beans to Europe, while Egypt is the biggest supplier of bobby beans. The list of African exporting countries is again long: Kenya, Zimbabwe, Burkina Faso, Mali, Senegal, Morocco, Cameroon and Madagascar for fine and extra-fine beans, and Egypt, Kenya, Gambia, Senegal, Ethiopia and Uganda for bobby beans (ADC, 1998f).

The Ugandan apple banana has to compete on the European market with supplies from Colombia, Mexico, Malaysia, Kenya, Cote d'Ivoire, Thailand, Mauritania, Cameroon, Venezuela and Ecuador (ADC, 1998a).⁵³ Apple bananas from Uganda are considered to have more export potential than cooking bananas and cavendish bananas. The EU market for cooking bananas is limited by ethnic dimensions and is not expected to expand much in the medium term. Uganda's cavendish bananas can never compete with the mass-produced, sea-freighted 'dollar' bananas from Latin America. Apple bananas also face stiff competition, especially from those from the Caribbean, Colombia and Kenya (Pro-Inter, 1996).

All in all, Uganda is having to sell its exportable fruit and vegetables in highly competitive international markets. In such a situation, marketing costs become an important issue.

⁵³ Kenya's apple bananas originate primarily from Uganda (ADC, 1998a).

Uganda is a land-locked country and all its fresh horticultural produce exports to Europe have to be air-freighted. With high international competition, freight costs are one of the decisive elements in the battle for the market. All developing countries are able to produce fruit and vegetables against relatively low costs. The transport costs account for a major part of the European import price. In 1996 the air-freight of a sample shipment of passion fruit from Uganda to the UK represented 49 per cent of the total CIF costs (ADC, 1998p). The percentages for other fruit and vegetables were even higher: apple bananas 55 to 58 per cent, okra 60 per cent and fresh bobby beans 67 per cent (ADC, 1998a; 1998o; 1998f).

Low freight costs make a country's produce attractive. All other circumstances being equal, they determine whether European importers prefer apple bananas, passion fruit, okra, fresh beans and hot peppers from Uganda or elsewhere. Unfortunately, the distance flown is the prime indicator of the freight rate charged. North and West Africa are nearer to the European continent than East Africa is. This is to their advantage. On the other hand, East Africa is closer to the Middle East but at present horticultural flows from Africa to the Middle East are limited. Market opportunities do exist however, especially for tropical fruits such as mangoes and avocados.

The flight distance is not the only factor that determines the freight rate. The supply of and demand for cargo space is also important. Supply depends on the number of passenger and cargo planes operating on a certain route. The more flights there are, the more cargo space there is available to exporters. The number of passenger flights is related to the number of diplomats, business people, tourists, development workers and others wanting to travel to and from the country concerned. Passenger planes can carry limited quantities of cargo in addition to passenger baggage. Between 1993 and 1998 the number of international passengers arriving at Entebbe more than doubled from 74,000 to 166,000 (UBS, 1999). Exporters benefited from this development.

The number of incoming cargo planes is at least partly related to the flow of high-value import goods from overseas countries. After off-loading incoming cargo, space is available for outgoing produce. Lack of incoming cargo from the EU (southbound cargo) hampers horticultural exports to the EU as is demonstrated by experiences in other countries. In the early 1990s Air France was sending a Boeing 747 cargo plane to Nairobi for the sole purpose of collecting avocados destined for the French market. It started the venture to employ aircraft that would otherwise be lying

idle but a lack of southbound cargo forced it to cancel the run. A similar arrangement to South Africa did not survive because southbound flights were unable to attract cargo (Nyoro, 1993).

A lack of southbound cargo is also a recurrent problem for Uganda. In 1998, 17,000 tonnes of cargo were off-loaded at Entebbe airport and 14,000 tonnes loaded (UBS, 1999). Available statistics do not specify the origin of the off-loaded cargo and the destination of the loaded cargo, but more general figures provide an indication. In 1998, 21 per cent of the intercontinental imports by value came from the EU, while 61 per cent of the intercontinental exports by value were destined for the EU (UBS, 1999). On the basis of these percentages, fewer than 4,000 tonnes of off-loaded cargo at Entebbe came from the EU, while more than 8,000 tonnes of loaded cargo were destined for the EU. These estimates need to be treated with caution as they are based on rude assumptions.⁵⁴ Nevertheless they indicate a considerable gap between south and northbound cargo.

Not only the availability of southbound cargo but also national economic policies affect the number of incoming cargo planes, as again evidenced in Kenya. In the 1980s and during the first half of the 1990s the Kenyan government heavily taxed aviation fuel. This deterred cargo planes from landing on their way from Southern Africa to Europe and even affected the routes of certain passenger flights. For some time the KLM flight from Amsterdam to Nairobi made a stopover at Mount Kilimanjaro airport in Moshi in Tanzania to refuel. Horticultural producers around Mount Kilimanjaro took the opportunity to claim cargo space and increase their exports.

The Ugandan government does not tax aviation fuel heavily. Nevertheless, it is relatively expensive because Uganda is land-locked and fuel has to be transported all the way from Mombasa to Entebbe (see Section 2.1). The high costs of aviation fuel are a competitive disadvantage for Ugandan exporters of fresh produce when competing with Kenyan and Tanzanian exporters.

Freight rates are determined by fuel costs and also by demand for cargo space. Fruit and vegetable exporters are not the only ones competing for scarce cargo space. Flower growers and fish processors also need to transport their perishable products to

⁵⁴ The calculations are based on the assumptions that all intra-African cargo was carried to and from Uganda by road and not by air, and that the cargo value per tonne was equal for all intercontinental origins and destinations.

Europe. Competition encourages airlines to increase their cargo rates but they also discriminate. Exporters with a relatively heavy product like Nile perch are given priority to exporters with lighter products such as vegetables since the airlines charge for both fish and vegetables by weight. This became evident during the EU ban on fish from East Africa in 1999. Prior to the restrictions, Ugandan vegetable and fruit exporters had to fight to get space for their produce on the plane but when the ban was imposed, agents even started to offer them cargo space at reduced rates.

In addition to freight charges, handling costs are an important cost item. Fresh produce exporters have to pay handling charges at Entebbe airport. These charges used to be high in comparison to those demanded in Kenya and Zimbabwe, but the situation improved in 1999 when ENHAS reduced its fees in anticipation of future competition from Fresh Handling (see Section 2.1).

In Kenya some individual exporters charter their own planes (see Section 2.1), but this does not happen in Uganda. The Kenyan exporters involved handle much larger quantities than any fruit and vegetable exporter in Uganda. These exporters could cooperate to hire a cargo plane together but they need to confront a few problems. First, total weekly supplies are often too small to fill a cargo plane. Second, exports fluctuate greatly and a vegetable exporter may handle one tonne one week, and three tonnes the next. Total exports of all vegetable and fruit exporters experience similar fluctuations. A chartered cargo plane would therefore sometimes leave half-full while being too small to carry all the supplies available at other times.

Weekly matching of supply and demand for cargo space is already an uphill task. Seasonal planning will be even more difficult. Most fruit and vegetable exporters work with short intervals between the ordering and sending of produce. They often know only one or two weeks in advance the quantities an importer wants to buy and/or how much they are able to supply. They can only guess how much cargo space they will require next month or in four months' time. However, a charter company has to be contracted prior to the start of the export season and the exact number of flights per week or month has to be stipulated in the contract.

The produce's varied destinations complicate matters further. Most supplies are destined for the UK, but fruit and vegetables are also sold to importers in the Netherlands, France and elsewhere. A chartered cargo plane would either have to fly to

all these countries, which is expensive, or the produce has to be transhipped to its final destination. Such transhipment may also be necessary when exporters use airlines, but then the airlines take care of the additional road or air transport. When exporters hire a cargo plane they have to organise transhipments themselves which is time-consuming and probably more expensive than the transhipment service offered by airlines.

The joint chartering of a cargo plane is less easy than it may at first seem. There is one important condition for success: a well-respected institution or exporter has to bear the responsibility. The Horticultural Exporters' Association of Uganda (HORTEXA) is too weak and the sector does not have a *pater familias* trusted by everybody. A lot of distrust exists among Ugandan vegetable and fruit exporters. This is understandable given the highly competitive market in which they operate but complicates mutually beneficial cooperation.

The best alternative is to work with the Ugandan Flowers Exporters' Association (UFEA) which is well organised and led by strong exporters. Ugandan flower exports fluctuate less from one week to the next than exports of fruit and vegetables because flower exporters operate on a seasonal basis. The flower export seasons and the fruit and vegetable export season largely overlap (see below). Thus, the fruit and vegetable exporters can benefit from UFEA initiatives.

In December 1999, HORTEXA joined forces with UFEA (with the help of the IDEA project). They set up a company called Fresh Handling that started to run the cold store at Entebbe airport in 2000 and to act as a handling agent (see Section 2.1). In September 2000, Fresh Handling also started to bring in chartered cargo planes. The initiative will be advantageous to the fruit and vegetable exporters provided that their rates appear competitive.

Apart from handling and freight costs, export taxes and import duties affect Uganda's competitiveness in the international market. Fortunately, the Ugandan government has abolished the export tax on non-traditional agricultural exports as part of its export promotion policy. Moreover, Uganda is an ACP country, which means that it is able to import its horticultural products into the EU market free of duty. Competing African countries such as Kenya and Zimbabwe fall into the same category so Uganda does not have a competitive advantage in this respect, but it is able to compete on an equal footing.

4.3. Seasonality of supply and demand

When dealing with airlines, Ugandan vegetable and fruit exporters do not only have the disadvantage that their produce is lighter than fish, but also that their exports are more seasonal. Airlines prefer exporters who buy cargo space throughout the year, but vegetable and fruit exporters are rarely able to do so. There are two reasons: seasonality of production in Uganda and seasonality of production in Europe. In the case of (tropical) fruits, seasonality of production in Uganda is the limiting factor. Passion fruits flower during the rainy seasons and ripening takes place during the following dry season. Ugandan production thus peaks in June-September and December-March (ADC, 1998p).⁵⁵ Outside these two periods fewer fruits are available, both for the local market and for export.

Similarly, Hass avocados, which are suitable for export, are harvested in Uganda from April to June. Unfortunately, the Ugandan harvesting peak coincides with that in Kenya which is already a well-established exporter of avocados, making it difficult for Uganda as a newcomer to compete.

For vegetables the rains are a limiting factor. Production during dry periods is possible when using irrigation, but irrigation equipment such as pumps and pipes are expensive. Higher production costs affect the competitiveness of the exported produce. Manual irrigation (e.g. buckets) may serve as a low-cost alternative, but it is labour intensive. Almost all vegetables for export are therefore grown rain-fed but this restricts export opportunities. For okra, the best marketing season in Europe is from December to May. However, the central region of Uganda experiences a dry period in January and February and farmers cannot produce rain-fed okra when the demand for the product is at its highest.

Hot pepper is more drought resistant than okra, and mature plants can survive a dry period of up to two months, especially when they are planted near forests and lakes where the morning air is damp. When transplanted at the beginning of October, at the start of the rains, the crop will start producing in December, the right moment

⁵⁵ In Kasese, one of the main centres of passion fruit production, the rains last from March till May, and from October till November (MFPED, 1998a).

economically because prices in Europe are at their highest. Production can continue at full strength until the beginning of May when the long dry season starts in Uganda, and has to be phased out by the end of May when prices in Europe start to decline. During the European summer, Northern Europe receives large hot pepper supplies from Mediterranean countries where the crop is grown outdoors, and from the Netherlands where it is grown in glasshouses. Uganda cannot compete with these suppliers because freight costs to Europe are higher than the wholesale price of European peppers. During the European winter local supplies dry up because outdoor temperatures in the Mediterranean drop and the glasshouses in the Netherlands require extensive heating making them too expensive. At this time of year Ugandan peppers are well received in Europe.

Similar seasonality patterns apply for fresh green beans. During the European summer France and Spain become major producers of fine and extra-fine beans, and the UK, Spain and Italy of bobby beans (ADC/IDEA, 1998f). The selling prices drop substantially, which makes it difficult for Ugandan and other African producers to compete. Very few fresh beans are exported to the EU between July and September.

4.4. Perishability and demand for high quality

Fruit and vegetables to be exported need a lot of care and the exporter has to be well organised. European importers, retailers and consumers want fresh produce without wrinkles, spots or bruises. The products should be well packed, and each box should contain products of a homogenous quality and appearance. On arrival in Europe or the Middle East the fruit and vegetables should still have a considerable retail shelf-life.

The quest for quality starts at the sowing stage. The export market demands specific varieties and the required seeds are not usually available in Uganda's rural shops. Farmers therefore tend to get seeds from other farmers when they start growing the crop, and subsequently use seeds taken from their own previous crops. This affects the germination rate and the productivity of the crop.

Once germinated, the battle against pests has to be fought. Proper spraying is required but availability of inputs is a problem. Peasant farmers who cannot afford to go to Kampala in search of supplies complain about the lack of suitable pesticides locally.

The market for agricultural inputs is a free market, which means that farmers depend on the willingness of local shopkeepers to stock agrochemicals. Most do not regard agrochemicals as profitable because of low turnover rates and if they do stock pesticides, it is usually generic types that are less effective.

The ability of peasant farmers to buy pesticides does not guarantee the automatic survival and success of their crop. The timing of spraying determines whether the chemical will work properly and peasant farmers frequently tend to spray either too late or too much or both due to lack of knowledge. If they spray too late the crop suffers anyway and the quality of the produce goes down. If they spray too much the harvested crop may contain large residues of the chemical.

Chemical residues have become an important issue in the EU, and all imported fruit and vegetables require a phytosanitary certificate. This certificate has to be supplied by an inspector at Entebbe airport before the produce is exported. The inspector checks whether the produce is of a certain minimum quality and on arrival in Europe the consignment may be tested for chemical residues. Residues of pesticides in excess of the set maximum residue limits (MRLs) or residues of banned pesticides, if detected, result in rejection of the produce and the return or destruction of a consignment at the exporter's expense.

So far, Ugandan exporters of fruit and vegetables have had no problems with rejected consignments but this does not mean that residue levels were always within the set limits. EU inspectors are inclined to primarily test produce from destinations with a bad reputation. Uganda is relatively new in the international fruit and vegetable market and its reputation has not yet been determined in this respect. The situation might change in the future as stricter limits are being applied by the EU (as shown by the EU fish bans, see Chapter 3). It is therefore important that the right chemicals are used in Uganda and that recommended pre-harvest intervals are adhered to.

The large farmer-exporters normally know what they are doing and check with other farmer-exporters, agrochemical importers and experts from projects such as IDEA for advice. Peasant farmers, however, often depend on a local stockist who lacks the specific knowledge required. If they are lucky they may be able to contact one of extension officers at the district agricultural office, but these officers often know little about non-traditional export crops such as okra and hot pepper.

The quality of exported fruit and vegetables does not only depend on proper crop husbandry but also on the harvesting time and post-harvest handling. Vegetables need to be the size demanded by the market, and fruit needs to be almost ripe. Again, there is usually a difference in knowledge levels between peasant farmers and large farmer-exporters. Peasant farmers tend, for instance, to wait too long and harvest the okra when the fingers have grown too big and hot peppers when they have completely matured.

The exporter can correct deficiencies by proper sorting. Often two rounds of sorting are necessary. The first is done in the presence of the farmer when the produce is collected, and the second is carried out at the exporter's warehouse before the produce is taken to the airport. Exporters with their own farms may also sort twice, first on the farm, and then in the warehouse when repackaging the produce.

The produce should remain in the warehouse for as short a time as possible. Hardly any of the fruit and vegetable exporters has a cold store and in an ordinary warehouse the products go bad within a few days. Few exporters have refrigerated trucks either. And, as explained in the section on flower exports, the cold store that was supposed to be used for horticultural commodities has not been in use until recently. The 'cold chain' that is so common for horticultural commodities in Europe does not exist in Uganda. This greatly increases the chances of loss or deterioration in quality.

If importers complain about the low quality of produce and the quality was good at the time of harvesting, this can normally be attributed to three factors. The first is transport problems from the farms to the warehouse, and from there to the airport. Trucks often get stuck, vehicles break down or the road is impassable. If the journey to the airport takes too long, the produce in the back of the truck starts to deteriorate. Fruit ripens and vegetables rot. Problems are worse if produce is insufficiently covered: cardboard boxes get soaked when subjected to a heavy shower and may completely disintegrate.

Inappropriate packaging is the second reason for post-harvest quality loss. Boxes that fall apart cause bruising or damage to produce. A lack of ventilation holes stimulates rot and premature ripening. However, importers want boxes that are strong and light at the same time. The boxes should contain some 4 to 10 kg of produce, depending on the commodity. They can then be sold on to retailers without the need for

repackaging into smaller units.⁵⁶ Appropriate boxes are for sale in Kampala, and can be ordered with all the required information printed on them specifying the type of produce, the name of the exporter and the country of origin. They are, however, quite expensive. In 1999 a cardboard box for hot peppers (4 kg) had to be bought at US\$ 1. At that time, the exporters sold hot peppers at US\$ 0.75 to US\$ 1 per kg, that is US\$ 3 to US\$ 4 per box. The cost of the box alone thus represented one third to one quarter of the sales value of its contents, which is too high.

A third reason for quality loss concerns delays in the actual export process of the produce. This may occur when the exporter is not able to obtain cargo space on the first plane to Europe. A delay of one or two days may turn good quality vegetables into unexportable sub-standard produce, especially when cold storage facilities are unavailable. Quality loss can be avoided by securing cargo space before harvesting the produce.

However, things can still go wrong even if cargo space is reserved ahead of time. The local cargo manager of an international airline may, for instance, promise too many exporters cargo space. If all the exporters turn up, some of the consignments have to stay behind. In such a situation exporters have to bribe the cargo manager heavily to get their produce on the plane. Some cargo managers purposely create a shortage of cargo space in order to collect *chai* ('tea' which is the local expression for bribes). They earn a lot of money at the expense of exporters.

Some exporters have learnt from previous problems with cargo managers, and bribe the cargo manager in advance for the entire export season. They strike a deal that is mutually beneficial: the manager puts a lower weight on the airway bill than the actual weight in return for *chai*. As a result the only one that loses is the airline. By reducing the weight on the bill even the air-freighting of low-value bulky produce such as sweet potatoes becomes profitable. Without a fraudulent airway bill, air-freighting sweet potatoes is uneconomical.

Apart from cargo managers, route planners of charter companies may make life difficult. They sometimes decide at the last moment to change flight plans, even when

⁵⁶ In the case of French beans, the packing unit tends to be even smaller. Supermarkets in Europe prefer French beans that are pre-packed in units of 150 grams and ready for cooking.

exporters' bookings have already been confirmed by the local office. They may, for instance, send the plane directly to Amsterdam and forget about an earlier planned stopover in Paris. This causes difficulties for the exporter who booked cargo space for Paris and told an importer in Paris to expect his produce. He either has to arrange transport by road from Amsterdam to Paris, which adds extra transport costs and time, or he has to wait for another charter plane that will fly to Paris, which also means extra time between harvesting and delivering the produce to the importer. In both cases the importer will receive produce that is less fresh.

Even when the charter company does not change the flight plan, things go wrong when planes get delayed and arrive late either at Entebbe or at the European destination. Late arrivals at Entebbe used to be a major problem with the export produce waiting for the plane without cooling facilities (see Section 2.1).

Loss of quality can be reduced by pre-cooling. In Kenya the pre-cooling of horticultural produce has become more or less standard procedure as it preserves quality and extends shelf-life. European importers reject French beans that have not been pre-cooled and in the near future, the same is expected for other horticultural commodities. It means that Ugandan exporters will have to invest in pre-cooling facilities if they want to remain in the market.

4.5. Contract coordination

Small-scale contract farmers grow some of Uganda's fresh produce for export. According to the theory of the New Institutional Economics, contract coordination in marketing channels occurs in the case of high uncertainty and high risks. Horticultural exports from Africa to Europe are indeed characterised by high uncertainty because the produce is highly perishable, quality standards are specific, and supplies show a seasonal variability. Under these circumstances, contracts potentially reduce the uncertainty of buyers regarding access to supplies, the uncertainty of sellers regarding access to markets, and they reduce the price and income risks of one or both parties (Jaffee, 1995b).

However, according to the literature, contract coordination in Africa also has potential drawbacks. First, contract farming may render spot markets very thin, raising

price volatility in the market and distorting the information supplied by such prices. Second, contractual coordination may result in significant barriers to entry such as when a contractor limits its suppliers to those who can plant or deliver certain minimum quantities or meet exacting standards. Third, contract coordination may be based on a highly asymmetric bargaining situation in which one or two buyers can largely determine the terms of trade. Producer prices may, for instance, be set at the beginning of the planting season whereby positive changes in market prices are not transferred to farmers. Fourth, contract provisions may be costly or impossible to enforce, given acts of nature, participant opportunism that leads to 'leakage' of the contracted crop to competing firms or to artisanal processing activities, and the legal unenforceability of the agreement (Jaffee, 1995b, Jaffee and Morton, 1995; Grosh, 1994, Otieno, 1996).

In Uganda, the contract farming system is generally advantageous to both the exporter and the peasant farmers involved. The exporter has sufficient supplies for sale, making him a reliable partner for importers. He does not have to compete with other buyers who may be either in local trade or also in the export trade. The peasant farmer does not have to look for a market because he has a willing buyer.

Producer prices are not set at the start of the planting season because price developments on the international market are difficult to predict due to high levels of competition and a large number of producing countries (see Section 4.2). Therefore, exporters determine their buying price on the basis of the agreed selling price per consignment. Due to a high level of competition at the buying stage (see below), they tend to transfer positive changes in market prices to their contract farmers.

Exporters determine producer prices, which means that the bargaining situation is asymmetric (one of the potential drawbacks mentioned above). Smallholder producers can, however, shift to other exporters if they are not satisfied with the price offered by their regular buyer. The exporters compete for produce: there are no price or buying cartels.

One of the pitfalls in the Ugandan system is that most of the fruit and vegetable exporters lack long-term contracts with importers. Some big Ugandan fresh produce exporters are merely agents of importers in the UK (see Section 4.1). They do not have a sales problem because they are pre-financed by their importer and only buy agreed quantities at pre-determined prices. The rest of the Ugandan exporters, however, are real

exporters in the sense that they do not have a guaranteed market outlet and bear all the trade risks involved. Their trading partners may express long-term buying intentions, but they place their actual orders on a monthly or even weekly basis. Importers' intentions often appear to be short-lived. Some importers are opportunists who turn to another supplier whenever they can bargain for a lower price. Others are optimists who overestimate their market and reduce orders or stop ordering as soon as they discover their mistake.

A few importers are crooks operating according to a fixed strategy. A malevolent importer asks for a few small trial shipments, for which he pays immediately on delivery or even in advance. He then informs the exporter that he wants large, weekly shipments. As soon as the exporter delivers, the importer starts to delay payments. The exporter is not immediately alarmed because of the initial prompt payments for the trial shipments. By the time he becomes concerned, the importer is already heavily indebted to him. At this stage the exporter faces a dilemma. If he stops delivering, he is sure to lose his money. If he continues to deliver, he may be able to convince the importer to pay, but the outstanding debts may also increase.

The importer will tell all kinds of stories to explain why payments were delayed and why things will take a turn for the better. He will also use all manner of tricks to deceive the importer. He will fax copies of bank statements and transfer orders to show that he has paid. He thus suggests that the problem lies with the exporter's bank. The bank statements have, however, been falsified and the transfer orders have bounced because there was no money in the importer's account. Before the exporter realises the truth, the importer's debt has further increased. The importer may also start complaining that the quality of the produce is below standard and that the value is just enough to cater for the freight costs (importers pay the freight charges directly to the airline). He uses this argument, which cannot easily be checked by the exporter, to avoid paying the exporter.

When things have come this far, there is little the exporter can do. Usually there is no written contract, and even if there is written proof of an agreement, enforcing it is not an option. The cost of employing a lawyer in Europe very quickly exceeds the value of the contract. Even tracing the import company can be a problem. As mentioned earlier, much of the produce is destined for the ethnic market in the UK and elsewhere. The importers involved often have multiple interests and own several firms. If lawyers

target one of the firms, the owner just discontinues it, disappears, and continues trading under another name.

When an exporter loses a customer he runs into problems because he has anticipated expected demand by planting crops on his own farm or by instructing contract farmers to grow a specific crop. If the crop is ready to be harvested but the market has been lost, the exporter will try to find a new market, but in many cases will be unsuccessful. Time will be of the essence. Sometimes the produce has specific characteristics in terms of variety and colour. Dutch importers prefer Scotch Bonnet peppers with a yellow colour. If the exporter had planted these, he will have to find another importer dealing with the Dutch market. Importers in the UK are only interested in red Scotch Bonnet peppers.

If the exporter is unable to find a new importer, he may try to dump the produce on the domestic market. Local demand for a commodity like hot pepper is, however, limited, and destroying the crop is often the only alternative. If the crop originates from the exporter's farm he has no choice but to bear the cost. If the crop has been grown by contract farmers, he has either to pay the contract farmers or pass on the cost. What will happen depends on the relationship between the exporter and the contract farmer.

If the exporter has been dealing with the farmers for a long time and he wants to continue a successful partnership he will explain the situation and come to an agreement. If the crop is still in the field it is clear to the farmers that the exporter cannot have made any money. If, on the other hand, the farmers have delivered the produce and it has left the country they will be inclined to think that the exporter is cheating them. In this case the exporter will probably have to pay at least some of the money if he wants to continue doing business with them.

If there was no long-term relationship between the exporter and the contract farmer, the partnership will not survive. The exporter will be inclined to ditch the contract farmer instead of bearing all the costs, and the farmer will no longer trust the exporter if he does not pay as promised.

If an exporter ditches the contract farmers before collecting the produce, the farmers can try to sell their crop to other exporters. They are, however, in a poor bargaining position when dealing with other potential buyers because the crop is ready and perishable. If they cannot sell the produce they have to throw it away. Nevertheless, they are better off than contract farmers who have been ditched by an exporter after

delivering their produce. There is little the latter group can do. The agreement between the exporter and farmers was unwritten; there is no legally binding contract that the farmers could use to take the exporter to court. As mentioned in the literature, the agreement is not legally enforceable. However, even if it were legally binding, the farmers would probably not go to court because of lack of knowledge about the judicial system and because of the costs involved.

Malevolent importers are only one of the difficulties encountered in contract coordination. Problems may also occur because of chance-seeking exporters and opportunistic farmers. The exportation of fresh fruit and vegetables is still a relatively new venture in Uganda. Many local businessmen have heard about this business opportunity and want to try their luck. They find a willing buyer in the UK or elsewhere, promise him a consignment, and start to look for the produce. They do not have contractual arrangements with farmers and depend on the spot market. When the demand for produce is high, they cannot find sufficient supplies and change their strategy. They try to persuade farmers producing on contract for established exporters to sell to them by offering a slightly higher price. Some farmers yield to this temptation which leads to 'leakage' of contracted crops becoming a problem.

Usually, the new exporter finds that the business is more complicated than anticipated. If he is not well organised, his produce will rot before it arrives at the airport. If he has not reserved cargo space in advance, the produce may be left to rot at Entebbe airport. If he is able to get the produce to Europe, he may be cheated by an importer or face heavy losses because he has paid farmers too much and receives too little. These numerous potential drawbacks result in many starting horticultural exporters disappearing as quickly as they emerge. This is not only a problem for themselves, but also for the farmers who have delivered to them instead of to their usual exporter. This exporter can no longer trust them and will refuse to deal with them. Thus, chance-seeking exporters and opportunistic farmers undermine contract coordination in the marketing channels.

The opportunistic behaviour of farmers does not only affect relations with exporters but also with non-governmental organisations that mediate between farmers and exporters. These NGOs educate farmers about production and the post-harvest handling of fruit

and vegetables for export. They collect the produce and deliver it to exporters and when an exporter has paid them, they pay the farmers after deducting a small fee. This fee is used to run the office and the extension programmes.

Such NGOs run into difficulties when their member-farmers sell directly to exporters. They teach farmers how to produce but do not benefit once the farmers are producing and do not receive the fees that were meant to cover their overheads. They are an easy target for chance-seeking exporters: due to their limited financial means they can only pay their members after they themselves have received payment, in contrast with exporters who can pay cash on delivery when dealing with farmers.

Many farmers prefer cash on delivery and tend to forget about their NGO when approached by an exporter. However, traders will only target farmers residing near all-weather roads, whereas NGOs also involve farmers in less accessible rural areas. If an NGO has to cease its activities farmers in accessible rural areas will not be hurt, but those in isolated rural areas will be hard hit as they can no longer sell their crops.

All in all, the contract farming of fruit and vegetables for export has experienced some setbacks in Uganda over the past decade. As a result, this type of channel coordination seems to be losing its popularity. On the one hand, increasing numbers of farmers are acting as independent producers, selling to whoever wants to buy as long as they pay cash on delivery. On the other hand, more and more exporters are focusing on this spot market.

A shift away from contract farming would be a natural development if it resulted from reduced uncertainty and fewer risks. After all, contract coordination is expected to occur in cases of high uncertainty and high risks. However, in the case of Uganda the aversion to contract farming results from frustrations experienced by farmers and exporters. The uncertainties and risks are as high as ever, and the growing importance of the spot market will increase the price and income risks of the parties involved.

The IDEA project is trying to go against the tide by setting up reliable smallholder contract schemes. It has, for instance, connected some fifty smallholders in Mubuku in Kasese District with a reliable Dutch-Surinamese importer in the Netherlands. The farmers are organised into a cooperative society which supplies seedlings, packing boxes, fertilisers and chemicals, and arranges transport to Entebbe and contacts with the importer. Prior to the export season, the cooperative and importer

sign a contract stipulating the weekly quantities to be supplied. If the farmers do not meet their obligations towards the importer they face a penalty.

The farmers grow irrigated hot pepper. Irrigation is feasible because all the farms are part of the Mubuku irrigation scheme. Cooperative members are privileged in their access to irrigation water, but not in the location of the scheme. Kasese District borders the Democratic Republic of Congo and is a long way from Entebbe airport, which results in relatively expensive and time-consuming transport. Nevertheless the farmers are making a profit and the cooperative is fairing well. The initiative by IDEA in Mubuku shows that reliable smallholder contract schemes are feasible. The scheme involves, however, only a limited number of farmers and is unique because of the presence of irrigation infrastructure. The chosen approach works well under these circumstances, but may not always be feasible.

4.6. Towards sustainable exports of fresh produce

As shown in this chapter, uncertainty and opportunistic behaviour are destabilising present exports of fresh produce. Problems originate at least partly from the kind of European importers involved: many are unreliable, and some are outright crooks. Sustainable exports require a re-orientation towards more reliable importers. That is, however, easier to preach than to practise. Established, reliable European importers of African fresh produce do exist, but they are scarce, especially when operating in the ethnic market.

The importers concerned set their own conditions: they want a steady and sizeable flow of high quality produce. Ugandan exporters will only be able to meet these requirements when their businesses are well developed. A 'modern' exporter of fresh produce should have an irrigated farm to secure supplies throughout the export season. He/she should have the transport means to deliver produce to the airport and a cold store to increase the shelf-life of the commodities. A mobile telephone and fax are required to be in constant contact with importers. The exporter has to be transparent in the way he/she manages the business so that importers feel they can trust their trading partner. Finally, the exporter needs to have capital to finance the first few shipments to Europe. When all these conditions can be met, a reliable importer can be approached and a

marketing contract be drawn up for the seasons to come. On the basis of this contract, production has to be planned and cargo space secured.

The scenario is clear but beyond most present exporters. They do not have sufficient capital to make the required investments and do not make enough money out of their dealings with unreliable importers to accumulate this capital. Some also lack the management skills required. They will eventually change the scope of their businesses and focus on other commodities and markets. The remaining exporters, who do have the capital and management skills, may well become successful entrepreneurs by exporting fresh produce. Uganda has a lot of potential in this area.

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5. Hides and skins

5.1. Market growth potential

Uganda's livestock population is increasing steadily (Table 5.1). At present, over 5.8 million cattle, 8.4 million goats and 1.4 million sheep roam the countryside. About 90 per cent of the cattle and almost all the goats and sheep are owned by pastoralists and smallholder farmers. The remaining cattle are to be found on the 168 large-scale commercial ranches, which use 'extensive grazing' methods (UIA, 1998a).

An estimated 1 million cattle hides and 3.4 million goat and sheep skins are produced annually.⁵⁷ Most are exported. Uganda's exports of hides and skins almost doubled between 1994 and 1998 (Table 5.2). This is a positive development but during the same period the annual export value of the country's hides and skins decreased (except in 1997) (Table 5.3). There are two reasons for this: firstly, volatile price movements on the international market with a depression in 1998 (see Section 5.5), and secondly, the composition of exports. With the exception of 1997, at least 95 per cent of exports by weight concerned raw hides and skins (salted or dried) while the rest consisted of wet blue hides and skins (half-finished leather) (Table 5.2).

Uganda's livestock population could form a healthy basis for a modern processing industry but the country has only a handful of tanneries that keep opening for business and then closing again. Local industrial processing appears to be an uphill

⁵⁷ Based on off-take rates of 17% for cattle and 35% for goats and sheep.

struggle. Low quality in the traditional supply chain and high processing costs in the modern sector constrain the road ahead as will be shown below.

Table 5.1. Uganda's livestock population, 1990-1998 (millions)

	1990	1992	1994	1996	1998
Cattle	5.0	5.2	5.1	5.2	5.8
Goats	4.7	5.1	5.7	6.7	8.4
Sheep	0.8	0.8	1.0	1.2	1.4

Source: ULAIA, 1999a.

Table 5.2. Ugandan exports of raw and wet blue hides and skins, 1994-1998 (tons)

	1994	1995	1996	1997	1998
Raw hides and skins*	6,955	4,359	4,916	8,541	11,552
Wet blue hides and skins	19	36	276	1,127	202
Total	6,974	4,395	5,192	9,668	11,754

Source: ULAIA, 1999a.

* salted and dried

Table 5.3. Value of Ugandan exports of hides and skins, 1981-1998 (US\$ '000)

Year	Value	Year	Value
1981	380	1991	4,331
1982	1,896	1992	4,039
1983	3,877	1993	5,847
1984	15,885	1994	10,893
1985	16,638	1995	8,924
1986	10,391	1996	8,477
1987	7,373	1997	16,018
1988	15,459	1998	9,549
1989	11,934		
1990	6,136		

Sources: Figures for 1981 to 1989: MFEP (1994), figures 1990 to 1995: MFPED (1998a), figures 1996 to 1998: internal files ULAIA.

Note: Export values were exceptionally low in the early 1980s because there was a lot of smuggling of hides and skins into Kenya at that time. Such informal exports do not appear in the national statistics.

5.2. Constraints in the marketing chain

Ugandan hides and skins are inherently good raw material. The bovine hides (of Zebu and Ankole breeds) have a high texture and heavy substance that is considered to render good quality leather (UIA, 1988b, ULAIA, 1999b). The quality of the export product is, however, affected by the way the cattle are kept, the slaughtering facilities and methods, and the trade arrangements in the marketing chain.

Problems with quality start while the animals are still alive. Free-ranging livestock wander through thorny bushes where they damage their skins, and deep scars and tick bite marks develop that lower the quality of the skin. The free-range system also requires branding of the animals. Branding on the back instead of on the cheeks, ears or legs again lowers the quality of the skin. Finally, subsistence livestock owners tend to slaughter only fallen or old animals (normally 5 to 7 years of age, sometimes up to 10 years).

Quality also deteriorates at the slaughtering stage. In rural areas most of the cattle, goats and sheep are slaughtered on the ground in the open air because there are no slaughter slabs or abattoirs available locally, and basic facilities like clean water are lacking. The butchers employ people to do the flaying. These flayers usually learn their skills on the job without going through any form of training. They lack technical skills for high-quality flaying and often operate without basic equipment like a proper skinning knife and sharpening stone. The butchers pay them in kind, by giving them meat or by allowing them to scrap the excess meat and fat from the hide. Due to improper flaying and scraping, the hides and skins often get perforated. Butchers are not unduly concerned about this as the meat is their main merchandise and the hides and skins are just a by-product (UNIDO, 1997).

Traditionally, green hides and skins are conserved in the rural areas by drying. A local collecting trader buys the green hides and skins from butchers and spreads them out on the ground, hangs them on poles (hides and skins) and wires (only skins), or mounts them on vertical wooden drying frames (only hides). The latter alternative is also called suspension drying. The hides are dried by direct sunlight (sun drying) or, when drying frames are stored under a roof, by the wind (air drying).

Sun and air drying often result in low quality hides and skins due to either 'slow drying' or 'rapid drying'. In the case of slow drying, a bacterial attack (so-called

putrefaction) will develop. The bacteria secrete enzymes that break down the hide or skin. The grain is damaged and, in severe cases, weakened to such an extent that it disintegrates during tanning (Barrett, 1982). Slow drying takes place when hides and skins are not protected from the rain and are subjected to intermittent drying. Bacterial attacks are worse if the hides and skins were slaughtered on soil contaminated with bacteria feeding on blood from previous slaughters.

Not only slow drying but also rapid drying may cause problems. The surface dries too rapidly so that it becomes impenetrable to the moisture trying to diffuse out from the centre of the hide. The trapped water in the centre permits uncontrolled bacterial growth (putrefaction). When moistened at a tannery the hide then disintegrates from the centre onwards (so-called blistering) and the grain and flesh layers separate (ULAIA, 1999b; Barrett, 1982). Rapid drying occurs when hides and skins are not protected from direct sunshine or heat. The bacterial attack will again be worse if the place of slaughter was contaminated.

Collecting traders may not be aware of the problems caused by slow or rapid drying. After all, the consequences become clear only at the tanning stage. The traders may, however, use rapid drying techniques on purpose. Rapidly dried hides are heavier than properly dried ones due to the higher moisture content of the inner fibre structure. Therefore the traders receive a higher price when paid by weight.

Traditionally, the collecting traders sell the sun/air-dried hides and skins to local merchants with storage facilities. The latter stock the merchandise until they have collected enough to fill a pick-up truck when they take the load to an exporter. The entire marketing system is pre-financed by the exporter. He advances money to merchants, who then advance money to collecting traders, who in turn advance money to butchers. The butchers use the money to buy an animal for slaughter.

Pre-financing is necessary because butchers and collecting traders lack the capital to finance their businesses themselves. The system is not only beneficial to them, but also to the exporters who are assured of supplies even when there is a lot of competition. Competition increases whenever prices rise. New local traders enter the market to try their luck in the collecting trade, but knowing little about the business they have to pull out as soon as prices drop. Their opportunistic behaviour destabilises the market.

Pre-financing offers stability in an unstable market but there is a disadvantage as well. The price is agreed on in advance and based on ungraded hides and skins. The exporter forces the price down as far as possible to cover expected losses. The low and undifferentiated prices for dried hides and skins do not provide an incentive to butchers and collecting traders to aim for high quality.

The hide and skin exporters are the spill to the marketing system. They have to have capital, not only to advance money but also to rent or build a warehouse and to build up stock. A considerable stock is required to have sufficient hides and skins of higher grades. Most overseas buyers do not accept ungraded material. Thus, the exporter has to grade his incoming hides and skins and make sure that he can deliver all the grades demanded.

In the first half of the 1990s, macroeconomic reforms allowed increased competition in the export trade. Between 1991 and 1996 the number of exporters increased from four to fourteen. This resulted in intense competition that forced exporters to adopt speculative pricing. Most exporters did not survive the rat race and went out of business. In 1997 only three active exporters remained but by the year 2000, there were six again.

Exporters have to cope with the low quality supplies that come to them through the traditional supply chain. In addition, they complain about bureaucratic procedures. An exporter needs an export certificate, which is valid for six months, and a veterinary health certificate for each export consignment. The health certificates are issued by the Veterinary Department of the Ministry of Agriculture, Animal Industry and Fisheries at Entebbe. The exporter has to apply in person and travel there irrespective of where his business is. This makes the certificate expensive and it is time-consuming to obtain as bureaucracy moves slowly (MFEP, 1995).⁵⁸

When all the required papers are ready, the consignment has to pass through customs. A study by UNCTAD in 1999 reconfirmed the findings of an earlier study by the Ministry of Finance and Economic Planning: delays and corruption are serious

⁵⁸ Exporters also need a trade licence that is valid for a year and a veterinary movement permit when carrying hides and skins from one district to another. This regulation is usually ignored (and if caught the fine is then paid).

problems in the customs administration (MFEP, 1995; UNCTAD, 1999). They hamper the performance of export traders, including hide and skin exporters.

Once through customs, the hides and skins are trucked to the port of Mombasa that is another bottleneck. It is very inefficient, loses cargo and gives low priority to the handling of goods from Uganda (UNCTAD, 1999). There is little that individual Ugandan exporters can do to improve the situation.

From Mombasa, the hides and skins are shipped to their overseas destinations. The quality of the hides and skins determines these destinations. Over three-quarters of these exports are destined for countries in the Far East with large industries producing cheap footwear for export. They are interested in Uganda's hides and skins as long as the material is cheap and of reasonable quality. In 1998 Pakistan was the largest importer of Ugandan hides and skins, followed by Hong Kong. By 1999, Hong Kong had taken over as the most important trading partner. It supplies raw material to the booming leather industry in China.

There are two reasons why Uganda exports hardly any hides and skins to Europe. First, European shoe and leather good manufacturers are only interested in high quality imports. Uganda produces limited (but increasing) quantities at present. Second, and more importantly, European industries increasingly prefer wet blue instead of dried or salted hides and skins. Environmental laws are becoming increasingly strict in Europe and high costs of pollution control make local production of wet blue expensive and imports from elsewhere attractive. As mentioned earlier, Uganda produces only limited quantities of wet blue, which makes the country's hide and skin exports unattractive to European buyers.

5.3. From air drying to wet salting

In the first half of the 1990s air/sun drying was still the norm in Uganda. In the second half of the 1990s, however, a dramatic shift took place towards wet salting. By 1999, over three-quarters of the exported raw hides were wet-salted.

The practice of wet salting started around the city and town abattoirs.⁵⁹ These abattoirs provide a service to cattle traders who witness the slaughter and immediately sell the meat to butchers (often on credit) and the green hides and skins to hide and skin merchants. These merchants take the raw materials to their premises for further treatment. In the past, they air-dried the hides and skins, nowadays they salt them. Salt is rubbed into the green hides, after which the hides are stored on pallets to allow drainage of the liquor formed through dehydration.

Local tanners and exporters have encouraged the so-called wet salting.⁶⁰ When done properly, it does not encounter the bacterial problems experienced in air/sun drying. Tanners are fed up with disintegrating hides, and exporters no longer want to face financial claims from overseas buyers who complain that the delivered hides are below standard.

For exporters, the export price for wet-salted hides is lower per kg than for dried hides, but this is compensated for by the increased weight per hide due to a higher moisture content. Transport costs remain the same. A 20-foot container can hold as many dried as wet-salted hides. The weight of the container is different but that does not affect the container rental charges.

Having successfully introduced wet salting into the city and town abattoirs, exporters recently brought it to the rural areas. In the process, they also reorganised their supply chain to deal with increasing competition. Some of the exporters replaced independent merchants with agents or employees and they opened collection centres in each supplying district. The agents or employees at these centres give out salt to collecting traders who do the salting at the slaughter sites immediately after receiving a hide or skin from a butcher. In this way bacteria are quickly killed, and long intervals between slaughter and further processing are avoided.

The collecting traders bring the salted hides and skins to collection centres, usually by public transport, but sometimes in their own pick-up trucks. The supplies are stored on pallets for one to two weeks to dehydrate. The agent or employee then re-salts

⁵⁹ Kampala has four abattoirs, and all towns and municipalities have one.

⁶⁰ It is also done by tanners themselves, when they buy green hides directly from cattle traders at the abattoirs.

the hides and skins to obtain uniform preservation.⁶¹ After another three to four weeks the moisture content stabilises and the hides and skins are ready for export.

Exporters who do not run collection centres go directly to individual collecting traders to supply them with salt and collect salted hides and skins. They put the salted hides in their warehouse and do the second salting themselves.

The entire salting exercise requires some 6 to 7 kg of salt per hide. Marine salt is imported from Mombasa for this purpose and is not expensive. Wet salting does, however, present a problem in terms of potential environmental pollution. The drained liquor that is formed when the hides and skins dehydrate can easily end up in the soil or in a local stream. Collection centres do not have treatment systems to avoid this and the NEMA is therefore not pleased with the shift from air/sun drying to wet salting.

The Ugandan Leather and Allied Industries Association (ULAIA) is training people in wet salting methods. When not salted properly bacterial growth remains a problem (especially halophilic bacteria which cause so-called red heat). Poor salting may result from a lack of knowledge about the method, the use of local salt instead of marine salt, the re-use of salt, and the use of salt that has been stored too long (Barrett, 1982).

ULAIA does not only train people in wet salting, but also in mechanical hide pulling. This will certainly further improve the quality of Uganda's hides. The mechanical pullers are relatively expensive, which makes them suitable for city abattoirs but uneconomical for small-scale rural slaughter.

In 2000 only one abattoir had a mechanical hide puller. The equipment is less popular than the ULAIA had hoped it would be. One of the reasons is that the puller gives a better quality hide but, in the eyes of butchers, poorer quality meat because it removes not only the hide but also fat. Their customers demand meat with some fat so butchers prefer the meat from a manually flayed cow. Consequently, cattle traders who have animals slaughtered will only consider using a puller when the buyer of the hide is prepared to offer a premium price.

⁶¹ The merchants that buy hides and skins at abattoirs either sell them after two weeks to a tanner who then processes them, or to an exporter who re-salts them.

Mechanical pulling has the additional disadvantage that it takes more time than manual flaying. Four flayers are required to flay a cow manually, while only two people are required to handle the mechanical puller. However, flayers are not expensive and the mechanical puller makes two out of four flayers jobless, which is less desirable from a social point of view.

5.4. Ugandan tanners in trouble

Tanning takes place in small-scale rural and large-scale industrial tanneries. Twenty years ago Uganda had thirteen rural tanneries producing vegetable tanned leather. Only one still exists, producing leather for bicycle saddles (Sasburg, 1999). In addition, Uganda has a limited number of industrial tanneries, officially, five of them. However, in 1999 one of these five was still under construction (Masaka Tannery Ltd) and two were closed (Freba Tannery and Alhammed Tannery). The remaining two were operational but not performing well. Leather Industry of Uganda Ltd was operating at less than one third of its installed capacity, while Uganda Fish Skin Tannery was having problems finding a market for its products. The tanning industry is clearly facing problems.

One of the constraints is the quality of its raw materials. Poor drying techniques in rural areas make some of the supplied raw hides and skins worthless for tanning (see Section 5.2). Supplies contain high percentages of low-grade skins and hides due to lack of grading and sorting at earlier levels in the marketing chain.

Exports of wet blue are further restricted by high production costs. Tanning is more expensive than in, for instance, Kenya, due to high transport costs of fuel and chemicals. These inputs have to be brought by road from Mombasa to Uganda. The transport of the final product from Uganda to the port of shipment creates further costs, a disadvantage when competing with countries that are not land-locked.

Production costs also increase because of frequent power cuts. Tanneries wanting a regular power supply need to buy an expensive generator. This is a disadvantage compared to Asian countries, but not in comparison with Kenya where the current supply is at least as unreliable as in Uganda. The newly finished extension of the Owen Falls dam is expected to improve the electricity supply in Uganda.

Production costs are also raised by investments in pollution control. Industrial tanning requires chemicals that are potentially damaging to the environment. In the past factories discharged polluted effluent water into local rivers and lakes but in an attempt to stop this, NEMA established effluent discharge regulations. Maximum levels for salinity, nitrogen and chrome were set. Initially the leather sector found the NEMA standards unacceptable but NEMA then defined maximum loads instead of maximum concentrations and distinguished between harmful and non-harmful chrome combinations. This led to the leather sector accepting the standards.

The consequence of the regulations is that tanneries need to have either a primary effluent treatment system and a connection to the sewage system, or a primary and a secondary effluent treatment system. The first alternative is costly but preferable to the second which is even more expensive. The new standards therefore imply that tanneries have to be connected to the sewage system.

On the basis of NEMA's regulations, two of the four operational tanneries, Freba Tannery and Alhammed Tannery, were closed. The effluent treatment systems of the other two, Uganda Fish Skin Tannery and Leather Industry of Uganda (LIU), were acceptable. Their better environmental performance is at least partly explained by their background. The fish skin tannery is a subsidiary of a large fish-exporting company, named Gomba Fishing Industries. The tannery was established relatively recently, with help from UNIDO (Leather, 1999). LIU was government-owned until 1995. It was renovated in the early 1990s with the help of a World Bank loan, and again after its privatisation with the help of UNIDO (Sasburg, 1999).

LIU is the only factory equipped to produce finished leather, but in fact 95 per cent of the output is wet blue, while only five per cent is finished leather. All wet blue is exported, while all the finished leather is sold locally. The Uganda Bata Shoe Company buys most of the finished leather and small shoe workshops buy the remaining supplies.⁶²

LIU keeps the best hides for export, while finishing the poorer grades for the domestic market. As a result, Bata complains that it cannot get enough locally-made leather of a high quality. To solve this, it imports leather from its own modern tannery in Limuru, Kenya. This leather is not only of better quality than the available Ugandan

⁶² Uganda has some 300 small shoe workshops (Sasburg, 1999).

leather, but also cheaper (Leather, 1999). Thus, Uganda's leather has problems competing with imports domestically as well as on the world market.

5.5. A volatile international market

The international market for hides and skins is volatile. Prices fluctuate on a short-term and long-term basis and year-to-year price fluctuations can be extremely large. During the second half of the 1990s prices dropped within two years to an unprecedentedly low level, as shown by the internationally-accredited Sauer's Index for hides and skins. Sauer's average world price index for sheepskins dropped from approximately 180 at the beginning of 1997 to 80 in early 1999. Over the same period the index for cattle hides dropped from 130 to 90, and for goat skins from 100 to 80.⁶³ Like all exporting countries, Uganda had to face the consequences of this slump. In 1996 it still exported its raw hides and skins at an average of US\$ 2,142 per kg. In 1997 this figure decreased to US\$ 1,630 per kg, and in 1998, at the height of the global recession, to as little as US\$ 796 per kg. Thus, within two years Uganda was receiving 50 per cent less for its exported raw hides and skins.⁶⁴

The Sauer's Index for cattle hides and sheepskins recovered somewhat in the second half of 1999 (to 110 and 100 respectively). Then, in the first half of 2000 the indices jumped to 125 and 130 respectively. Apparently, the recession was over for cattle hides and sheepskins. Unfortunately, it was not for goatskins. Experts had predicted in 1999 that the index for goatskins could not possibly drop any further, but it did (to little over 60 in June 2000). From then onwards they did not dare to predict what would happen apart from saying that one day prices for goatskins would recover.⁶⁵

The unpredictability and volatility of international price developments result from the large number of factors that determine world supply and demand. A major supply-side factor concerns the level of meat consumption. Hides and skins are by-products and nobody will slaughter an animal just for its hide or skin. In Uganda per

⁶³ The Sauer's Index is based on a basket of 54 types of the world's major internationally traded hides and skins. Week 14 of 1991 is taken as 100.

⁶⁴ 1996: 3,734 tons at US\$ 7,998 million; 1997: 8,541 tons at US\$ 13,924 million; 1998: 11,554 tons at US\$ 9,194 million (Source: ULAIA internal files).

⁶⁵ Source: Market News Service, www.intracen.org/services/mns/reports.htm.

capita meat consumption is still relatively low and the number of hides and skins produced is constrained by the demand for meat.⁶⁶ If incomes rise and the demand for meat increases, more animals will be slaughtered and more hides and skins will become available. Due to the small local processing industry, most of these hides and skins will be exported, thus (modestly) increasing international supply.

In developed countries the situation is different. There, per capita meat consumption is not increasing anymore and in Western Europe it is even declining. This is not only a long-term trend but is happening as a result of outbreaks of disease like BSE among cows and pest amongst pigs. Meat is no longer regarded as safe to eat and consumers are reducing consumption. As a result, fewer animals are being slaughtered and fewer hides are becoming available for the local tanning industry. The industry then buys its supplies on the world market, thus increasing international demand.⁶⁷

The output of hides in developed countries is also affected by changes in agricultural policies. Livestock herds in the European Union and the United States are much larger than market conditions require. Meat production is subsidised but this is changing. The current policy is becoming much too expensive and a scaling-back is thought to be inevitable. The result will be a decline in hide and skin production in the developed world. Global production will not necessarily fall as a result, but the geographical composition of production will change (Ballance *et al.*, 1993).

An important factor that determines world demand is fashion. When young people are told by pop stars to wear sports shoes, the demand for leather shoes and therefore for hides is reduced. When suede is no longer in fashion, as happened in the second half of the 1990s, the demand for goatskins declines (and international prices drop dramatically).

Local events and disasters in large importing and exporting countries also determine international demand and supply. Russia used to be a large importer of hides, skins and leather. However, in 1998 the country was technically bankrupt and could no longer pay its import bills. Countries like China and Turkey stopped sending supplies

⁶⁶ The demand for meat is not only low but also shows seasonal fluctuations in Uganda. When there are more beans and vegetables available at the end of the rains people eat less meat.

⁶⁷ There is also pressure on tanners and finishers to develop new techniques and methods for curing that would improve the quality of leather obtained from hides of poorer quality (Ballance *et al.*, 1993).

and were therefore left with large unsold stocks. As a result world market prices dropped.

Turkey itself was hit by a major earthquake in the second half of 1999. Several tanneries suffered structural damage and had to stop production. This lowered Turkey's imports of hides and skins, thus reducing international demand.

Like China and Turkey, Argentina is a large player in the market. In the second half of 1999 the country was plagued by social unrest including labour and transport strikes. This pushed up local costs of hides by 20 per cent and their hides became too expensive for export. Other producing countries benefited.

It is clear from these examples that it is impossible to predict international supply, demand and price developments. A hide and skin exporting country like Uganda has to live with this economic insecurity. The only thing it can do is produce good quality hides and skins at low cost in order to stay competitive. More can still be done in this respect.

5.6. A summary of factors influencing future hide and skin exports

The factors influencing Uganda's future exports of hides and skins can be categorised as economic, political, social/cultural, and international. National economic progress will determine the future purchasing power of the Ugandan population. Higher purchasing power leads to the consumption of more meat, and thus to increasing supplies of raw hides and skins.

Future government policies will stimulate or slow down local processing of raw hides and skins into half-finished and finished leather. Stringent environmental regulations, taxation of imported inputs and the free importation of second-hand shoes may have a negative effect, while the promotion of domestic and foreign investment in the leather sector may have a positive impact.

Changes in socially and culturally-determined consumer preferences will affect the introduction of technical innovations. For example, a future preference for lean meat instead of meat with fat will give the mechanical hide puller a better chance of success.

Changes in international supply, demand and competitiveness will determine Uganda's position in the world market. Global supply and demand are exogenous to

Uganda, but the country can improve its competitiveness by upgrading the quality of its exports. Improvements are already taking place, e.g. wet salting is replacing air drying, but people at all levels in the marketing chain need to be trained in high quality processing. The Ugandan Leather and Allied Industries Association is doing its best and deserves all the help it can get.

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6. Vanilla

6.1. The revival of a cash crop

Vanilla gained commercial importance in Uganda in the 1950s when the Mitchell Cotts Estate started a joint venture with the American McCormick Company. Mitchell Cotts built a processing factory that was run by its subsidiary the Uganda Company. Production declined in the 1970s after President Idi Amin nationalised the Uganda Company and then all processing at the factory stopped and outgrowers lost their only market outlet. As a consequence the vanilla crop was abandoned. Production became negligible and vanilla was only grown at subsistence level to be used in local spirits and tea (Nalukenge, 1994).

Under Museveni, vanilla was re-introduced as an export crop. The first companies to start exporting were UVAN Ltd and TAIMEX Ltd in 1989/90. The owner of UVAN, Mr. Sekalala, re-established contact with the McCormick company and agreed to deliver rapidly-cured vanilla. He started to grow the vanilla on his own farm and also involves outgrowers. Processing takes place at a curing plant on his farm. The rapid-curing method involves chopping the beans into small pieces, immersing them in hot water, letting them sweat for a few days, and then placing them on a tray to dry.

TAIMEX found a willing buyer in the Canadian subsidiary of the multinational Quest International and bought vanilla from peasant farmers in Mukono District. To streamline transactions with these farmers, the Mukono Vanilla Spices and Horticultural

Crops Co-operative Society Ltd was established in 1991. TAIMEX processed the beans in the traditional method. Whole beans are dipped in hot water and wrapped in blankets to sweat for a few days. The beans are then dried naturally for 2 to 3 months by putting them on trays in the sun for a few hours a day and storing them in blankets and wooden boxes for the rest of the day.

After a few years, TAIMEX lost its contract with Quest International when its Canadian subsidiary closed. TAIMEX had to look for new buyers and found them in Europe, while UVAN continued to supply McCormick in the United States. In 1997 three more processor-exporters appeared on the Ugandan market: Uganda Marketing Services, Banga Multipurpose Cooperative Society, and Sun Trade Consulting (ADC/IDEA, 1998). They all use the traditional curing method. However, UVAN has remained by far the most important vanilla exporter.

Exports increased from 1.5 metric tonnes in 1990 to 30 metric tonnes in 1998 (Table 6.1). Export volumes increased steadily with the exception of 1995 when most of the vanilla procured from the farmers was not exported as a result of the then low prices offered by the major vanilla importers (ADC/IDEA, 1998). In 1998, some 5,000 farmers were growing the crop. Production was no longer restricted to central Uganda but also took place in Western Uganda, especially in the Ruwenzuri Mountains where the Ruwenzuri Vanilla Growers Association was established. Subsequently, farmers in other parts of Uganda have become involved. Vanilla cultivation has spread to more than thirteen districts, but Mukono has remained the centre of vanilla production.

Table 6.1. Uganda's vanilla exports, 1990-1998

Year	Quantity (kg)	Value FOB ('000 US\$)
1990	1,500	n.a.
1991	4,820	178
1992	3,446	171
1993	5,815	391
1994	13,488	674
1995	176	8
1996	14,868	475
1997	25,483	637
1998	30,000	750

Sources: For 1990-1997: ADC/IDEA (1998); for 1998: ADC/IDEA internal files.

Experience has shown that vanilla does not do well on large estates in Uganda. In the first half of the 1990s, large-scale production was tried on five estates, each planting more than 10 acres of vanilla. However, the farmers involved either abandoned the farm, gave the land to outgrowers, or let the plants go wild thus getting very low yields.⁶⁸ Vanilla is a very labour intensive crop and labour management on large-scale vanilla farms appeared to be a problem, especially during peak periods. Poor supervision of labourers led to low yields which in turn made the hiring of labour uneconomical.

In contrast to estate production, vanilla has shown to be very well suited for smallholder cultivation. The crop is environmentally, smallholder and gender-friendly, as will be explained below. However, while production increased in Uganda, prices declined due to aggressive new players on the world market (see Section 6.5). Will vanilla prove to be the long-term alternative that smallholders are looking for, or will its success be short-lived as in the 1960s?

6.2. A smallholder-friendly crop

Vanilla is a climbing vine of the orchid family, which does well in light soils at lower altitudes. It used to grow wild on forest trees, and needs a fast-growing support tree when cultivated on a farm. The crop does not need a large area to grow, and as it requires light shade it can be intercropped with coffee or bananas. The limited demand for land and possibilities for intercropping make vanilla an attractive cash crop for smallholders.

A typical smallholder area under vanilla ranges from 0.25 to 0.5 acres (ADC/IDEA, 1998). The scale of production is not so much determined by the available land as by the available labour. The flowers of the vanilla plant have to be pollinated by hand in order to produce the desired vanilla beans. The flowering season takes about 2 months. The best moment to pollinate is early in the morning when the air

⁶⁸ UVAN/Sekalala Ltd stopped production, SCOUT gave the land to outgrowers, Kawolo Amirali let its farm go wild and Kasirye Agro-mixed Farm abandoned its vanilla farm.

is still humid. The flowers bloom only for one day and must be pollinated that same day, otherwise they fall off (ADC/IDEA, 1996b). This means that during the flowering season people need to be available to work on the vanilla crop each day of the week. The number of people available determines the number of flowers that can be pollinated each morning.

Apart from pollination, the harvesting of the beans demands substantial labour efforts. The vanilla harvest also lasts two months and farmers should preferably pick beans a few times a week. Beans that are not harvested in time turn black and are then overripe for processing (ADC, 1998).

All in all, each production cycle includes two labour peaks: one during the flowering stage (two months) and one at the harvesting stage (two months). In Mukono, the centre of vanilla production, the rainfall pattern allows two production cycles per year. Vanilla vines start flowering after a dry season of two to four months, and Mukono has two such dry seasons. Thus, vanilla production in Mukono is characterised by four labour peaks a year totalling 8 months. Vanilla is indeed a labour-intensive crop.

The number of available household members (adults and children) determines to a large extent the number of vanilla vines that can be handled successfully. Children participate especially in the pollination exercise as their small fingers and sharp eyes are well suited for the job. The pollination cannot be done after school as it has to be carried out in the morning to be successful. This leads to high school-truancy levels during pollination periods.

In addition to family members, casual labourers may be mobilised. In Mukono, communal or group labour, whereby people mutually assist each other without payment, has died out (Kyabangi, 1995; Kasente *et al.*, 1998). Therefore, households can only call on casual labourers if they have money to pay them. This is a major restriction although in 1998 more than half of the vanilla smallholders utilised hired labour (ADC/IDEA, 1998).

There is a difference between male-headed and female-headed smallholder households in their use of hired labour. In 1998, more male-headed households hired labour than female-headed ones (Table 6.2). In male-headed households substantially more of the total labour requirements were met by hired labour. The number of family members engaged in vanilla production was the same for male and female-headed households. The male-headed households had, however, on average a larger area under

vanilla than the female-headed ones. Although female-headed households owned less land than male-headed households, land was not the limiting factor in vanilla production. Therefore the figures suggest that male-headed households with a larger area under vanilla could handle this crop because they were able to hire more labour. As hired labour has to be paid, these households must have had more financial resources.

Table 6.2. Labour and land characteristics of male and female-headed households in vanilla production, 1998

	Male-headed Households	Female-headed households
Labour:		
- Number of family members engaged in vanilla	4	4
- % of farmers utilising hired labour	60	50
- % hired labour of total labour requirements	25	10
Land:		
- Average area owned	8	5
- Average area under vanilla*	0.7	0.5

Source: ADC/IDEA, 1998.

* including producing plants and new plantings

Vanilla farmers wanting to expand production by hiring labour face a growing problem due to the increasing scarcity of labour for hire especially in the central region of Uganda. In the past, Rwandan refugees who were living in Uganda came to the farms to work. They have, however, either returned to Rwanda or bought land themselves. While the local supply of casual labour is declining in rural areas, demand is increasing. Casual labourers are still available in large numbers in the west and north-west of Uganda, but it is too expensive for an individual smallholder to relocate them. Moreover, these people do not have experience with vanilla. Casual labourers from the central region have experience, but they are expensive.

Mechanisation is not a solution. Vanilla is interplanted with other crops and grows on support trees. Therefore, land preparation prior to vanilla planting has to be done by hoe and cannot be done by tractor. Once planted, weeding also has to be done by hoe. Vanilla plants have shallow roots and even a small tractor would easily damage

their root system if used for weeding. A tractor might also damage the foot of a vanilla stem, leading almost inevitably to the death of the plant.

6.3. A gender-friendly crop

Vanilla production is gender sensitive. The pollination exercise has to be done with care and used to be women's (and children's) work but the division of labour is changing. Initially the male head of the household would decide to grow the vanilla, and expect his wife or wives to do the pollination. He would control the money earned from the sales of the 'family plot'. Nowadays in many vanilla-producing households both husband and wives have their own vanilla plots. During the flowering seasons the women will first work on their husband's plot (the family plot) and then concentrate on their own vines. Although the land belongs to the husband, the wives can usually keep the money they earn by growing their own crops.

Mature women may go one step further and decide that they do not have time to work on their husband's vanilla plot and tell him to look after his own crop. The man has no choice but to do the pollination himself, hire labourers to do the job or forget about vanilla. In some households the latter does indeed happen and one of the wives may grow vanilla while the husband does not.

In summary, vanilla production is changing the labour division in households giving women some financial autonomy. According to a survey among vanilla farmers in Gonve, a village in Mukono District, 40 per cent of the interviewed farmers said the wife authorised expenditure of the money from sales of vanilla, while 60 per cent pointed to the husband (Kasente *et al.*, 1998).

Over the years, vanilla-growing women have formed clubs. Although education about vanilla growing was the prime objective, they appeared to have also a general emancipatory aim. According to Kyabangi (1995), such clubs 'have helped women learn how to express themselves, how to address different issues in their homes, especially issues concerning their relationships with their husbands'.

Women have also learnt how to use banking institutions. Club members opened individual accounts with a local branch of the Uganda Commercial Bank. They put their

earnings from vanilla sales into these accounts, which made it more difficult for their husbands to access the money.

Unfortunately most of the rural branches of the Uganda Commercial Bank have closed down over the past few years due to cost-saving measures and because branch managers appeared to be embezzling money. Women now have to travel a long way to get to a bank in an urban centre and most have reverted to keeping the money from vanilla sales in their homes. This makes the money more easily accessible to the husband and increases the chances of theft.

6.4. An environmentally-friendly crop

Vanilla is an environmentally-friendly crop. Production does not require any clearing of virgin land because the crop is normally interplanted on existing plots among coffee trees and bananas. Moreover, production stimulates agro-forestry because of the need for support trees. The *Glyricidia* trees that are commonly used for this purpose grow naturally on Ugandan plains and farmers also plant them to demarcate their land. The trees can be trimmed in such a way that they branch out above people's heads and the horizontal branches provide shade for the vanilla beans. If forest areas are cleared to grow vanilla, farmers only remove shrubs and waste trees and leave large trees standing to provide shade for the vanilla plants growing on young support trees.

If properly managed, severe pest and disease problems are rare in vanilla production. The only problem is occasional root rot. If it occurs, farmers are advised to uproot the infested plant and to leave the spot to rest. Pesticide use is therefore non-existent. It is very unwise to apply any pesticides because vanilla beans can easily absorb the aroma of the pesticide thus becoming useless.

Farmers are also advised not to buy inorganic fertilisers because application of such inputs is uneconomical. Moreover, international buyers prefer organically grown vanilla. Farm wastes such as dry grass, cow dung and coffee husks are used for mulching and fertilisation. This makes vanilla 'an environmental cleaner' (ADC/IDEA, 1996a and 1998).

Picked green beans must go through an elaborate system of curing to bring out the vanilla flavour. However, the process does not require any chemicals. It includes dipping the beans in hot water, sweating them in a woollen blanket, and drying them in the sun or in an oven. The processing does not pollute the environment and the only potential environmental threat is the cooking process that requires firewood to heat the water (ADC/IDEA, 1996a).

6.5. Developments in the world vanilla market

Vanilla may be a smallholder, gender and environmentally-friendly crop but that does not mean that it is by definition a suitable export commodity for Uganda. Its export prospects are first of all related to developments in the international vanilla market.

The popularity of vanilla as a flavouring is universal. It is widely used in ice-creams, bakery and dairy products. It is also used in beverages: the Coca-Cola company is one of the biggest users of vanilla in the world. Finally, vanilla extracts also find their way into perfumes and pharmaceuticals.

Only a limited number of countries have the ecological and climatic conditions to grow vanilla. Producing countries include Madagascar, Comoros, Indonesia, Mexico, Reunion, Tahiti, Tonga, Fiji, Morea, Nossi-Be, the Seychelles, Mauritius, the Caribbean Islands and Uganda (Craig *et al.*, 1998).

Madagascar was for many years the most important supplier of vanilla in the world. In the 1970s it produced 70 per cent of all global supplies and had the highest reputation in vanilla processing (Robbins, 1995). Madagascar's 'Bourbon' vanilla was the best in the world. The Madagascar-based Vanilla Alliance (Univanille) effectively controlled world market prices for vanilla. The cartel stocked and released vanilla beans onto the world market depending on supply and price considerations (ADC, 1998). The alliance included the three Indian Ocean producing countries Madagascar, Comoros and Reunion. It selected dealers/importers of vanilla beans, determined export quotas for the three exporting countries and set an official FOB price for vanilla (Blarel and Dolinsky, 1995).

Madagascar took its dominant supply position very much for granted. However, the vanilla farmers were poorly treated by the government export control system and the

share of the overall taxation in the actual export price increased from 45 per cent in 1975 to 82 per cent in 1989 (Blarel and Dolinsky, 1995). During the period 1981-1991, producers received, on average, a revenue more than ten times lower than the revenue they would have received if the government of Madagascar had favoured a non-interventionist (free trade) policy (De Melo *et al.*, 1996). Farmers could only sell their crop to local processors at very low prices, which discouraged production, reduced the care needed to produce a high-quality bean and encouraged smuggling (Robbins, 1995).

When Uganda came onto the market in 1989/90, the official export price for Madagascar's Bourbon vanilla was as high as US\$ 74 per kg. Uganda received US\$ 60 to 70 for its traditionally-cured vanilla (FOB Entebbe). But the bubble was about to burst. The artificially high prices on the international market had led to the development of synthetic substitutes, such as Chinese vanillin (synthesised from several organic sources) and eugenol (marketed by chemical companies in the USA and made from waste sulphite liquor from paper mills or coal tar extracts) (Robbins, 1995). More importantly, the high prices on the international market had encouraged competitors to increase production.

The most important upcoming competitor was Indonesia. It increased vanilla exports from 80 tons in 1980 to 666 tons in 1991. Indonesia first targeted the US market where low-quality vanilla beans could easily enter the market and where price competition was promoted. The US market absorbs 50 to 60 per cent of the world supplies of vanilla making it a very attractive market. Indonesia progressively took technical and organisational measures to improve the quality of its vanilla beans. As a result it gradually moved up to serve the higher quality segments of the US market, as well as into the quality-demanding European market (with France and Germany as the two most important markets) (Blarel and Dolinsky, 1995).

Indonesia was not a member of the vanilla cartel and undercut the cartel's prices. Its growing exports hurt Madagascar's leading position badly and its export volumes fell drastically from a historical maximum of 1,700 tons in 1977 to 640 tons in 1991. By 1990 the world market was flooded, and Madagascar alone held enough unsold stocks of vanilla to meet total world consumption for up to three years (Nalukenge, 1995).

Madagascar tried to solve its problems by burning hundreds of tons of its poorest quality vanilla stocks in 1993 and increasing the price paid to farmers (De Melo, 1996; Robbins, 1995). This did not help much. In 1995 the government took a more drastic

step and initiated policies to liberalise the sector, including phasing out official export prices and replacing the export tax of 80 per cent with a fixed tax. The effect was a sharp fall in the export price of Madagascar's vanilla (Table 6.3). Other producing countries had no alternative but to follow suit.

In subsequent years supplies on the world market further increased. Indonesia expanded its production to 700-800 tons a year. Madagascar also stepped up exports to generate foreign exchange for its ailing economy. Exports increased to 1,000-1,200 tons a year. This resulted in further pressure on prices. In 1997 the average price for all suppliers had gone down to 40 per cent of the 1994 price level (Table 6.3). All producing countries suffered, including Uganda.

Table 6.3 shows that the US import price for vanilla from Uganda declined considerably but not as much as that for vanilla from Madagascar and Indonesia. The reason was that almost all the Ugandan vanilla concerned supplies on contract by UVAN to McCormick. Prices for Ugandan exports to other destinations declined much more. In 1997, the lowest price was US\$ 20 per kg, and in 1998 it even dropped to US\$ 12 per kg (FOB Entebbe).

Table 6.3. Average FOB prices for US imports of vanilla, 1994-1998 (US\$/kg)

Supplier	1994	1995	1996	1997	1998
Madagascar	62	50	26	18	21
Indonesia	36	30	27	20	15
Uganda	47	40	40	36	29
All suppliers	50	40	27	19	19

Sources: ADC (1998), ADC/IDEA (1998), ADC internal files.

In 1999, prices increased slightly. Then Madagascar was struck by a hurricane in January 2000. The Malagasy government assured its suppliers that this would not affect vanilla production in the country, but international vanilla traders did not believe them and prices shot up. The provisional price for Bourbon vanilla in 2000 was US\$ 55, and for Ugandan vanilla US\$ 35 to 40.

The future prospects for international vanilla prices are highly uncertain but fortunately global demand is growing. There has been a renewed interest in natural vanilla by international flavour houses as part of the trend to use natural ingredients in quality foods instead of synthetic ones. US legislation is encouraging this trend because it stipulates that products containing synthetic vanillin are required to declare the presence of this artificial flavouring on the label. The word 'artificial' must precede the word 'vanilla' on the packaging, which makes the product less attractive (Craig *et al.*, 1998). Natural vanilla has the additional advantage that it can be grown organically without much difficulty (see Section 6.4). This makes it even more attractive to health-conscious Western consumers.

Global demand for vanilla is expected to grow, but the global supply of vanilla might increase faster. This is a problem because the market is already more or less saturated. The aggregate global demand for cured vanilla is at present estimated at 2,500 tons to 3,000 tons a year (ADC, 1998). Once it has recovered from the hurricane disaster, Madagascar is thought to be able to supply 1,500 tons annually. Indonesia has been hit by political and economic problems over the past few years, but if stability returns, it is estimated that it could supply at least 800 tons per year. Comoros will remain stable at 200 tons. In total, the three biggest vanilla producers in the world will thus produce 2,500 tons which leaves at best a relatively small market for the other producing countries.

Meanwhile new countries are trying their luck. Trials are taking place in Tanzania and India, but production is still insignificant. China is becoming a vanilla-producing country, but the quality of its cured beans is still poor. If China improves its processing technique in the future and further increases production, the country may very well become a threat to existing producers. Global oversupply will then be a real danger.

Established vanilla producers have one major advantage: it takes time for newcomers to become exporters. The biggest bottleneck is the availability of vines for planting. Vanilla cannot be multiplied by seed, only by taking pieces of vine from existing plants. When the pieces are big (1 to 2 metres), it takes two years before the plant starts flowering, and if they are small, four years. Countries that are in production can afford to plant long pieces of vine. Countries that are starting production first have to get hold of vines. This is not easy because producing countries do not want to export

them. If a newcomer has been able to obtain vines, he will have to work with short pieces which means that it will be at least 4 years before he can start harvesting and exporting.

Apart from planting material, knowledge about vanilla growing is required. Farmers have to learn how to pollinate and when to harvest. The learning process takes more time when there are no other vanilla farms around. Finally, vanilla production requires an availability of cheap labour and so not all countries that are able to produce vanilla from an agro-ecological point of view will become major exporters.

6.6. A development strategy for the Ugandan vanilla sector

In 1998, the costs of smallholder production of Ugandan vanilla were estimated at US\$ 530 per kg (ADC/IDEA, 1998). At that time, the farm gate price was at an all time low of US\$ 2,500 per kg. This meant that vanilla production was still profitable, even though the global vanilla market was depressed. Vanilla production is, however, labour intensive and the returns per labour day may have been unattractive. It is therefore important to be prepared for future slumps in the world market, and to consider a long-term strategy for the Ugandan vanilla sector.

It is generally agreed that Uganda should base its market strategy on quality. Uganda is only a small player in the global vanilla market, at best supplying two to three per cent of world import demand in the coming years. At the moment, Ugandan vanilla is already of considerably better quality than Indonesian vanilla but is still somewhat poorer in quality than Bourbon vanilla from Madagascar. Uganda has the potential to supply top-class beans as the country has the appropriate climatic conditions to grow long vanilla beans that have the right chemical composition. When properly cured, these beans become dark brown ('black vanilla'), develop a good flavour and have a high vanillin content. Uganda can therefore offer its vanilla on the global market as a high quality product and develop its own niche market.

Good quality depends first of all on proper crop husbandry. Crop husbandry determines whether the beans grow long and straight and are free of spots or scratches. The size of the bean, for instance, is partly determined by the number of beans per cluster. Farmers in Madagascar leave seven beans per cluster and remove any excess

ones, while many Ugandan farmers tend to aim for as many beans as possible. They end up with more than ten beans per cluster but the smaller the bean, the lower the price on the international market. This information has to be communicated to the farmers by extension officers. High quality output requires high quality extension services.

Good husbandry also includes timely harvesting. Overripe beans cannot be processed and immature beans give a low-quality cured product. Immature harvesting appears to be a problem at the moment. The reason is not only ignorance but also theft. Although vanilla beans grow to their full size in about two months, it takes eight months for them to attain harvest maturity. In the Mukono region thieves, often local people, come to harvest vanilla beans at night. Owners try to prevent theft by harvesting their beans immaturity and the Mukono Vanilla Spices and Horticultural Crops Co-operative Society is trying to reduce the theft problem by using local collectors who know the vanilla farmers in their area. If somebody offers a lot of vanilla for sale and they are known not to have a large vanilla farm, the collector knows that something is amiss.

In recent years independent collecting traders have also entered the local vanilla trade. They buy vanilla beans from individual farmers to sell to the large processor-exporters. Interestingly, their activities are leading to higher quality supplies because the collecting traders use their own money. They have to make sure that they can sell everything they buy. If a processor rejects supplies because of immature or overripe beans they lose money. They are therefore very careful when buying beans and thoroughly check the quality of supplies offered by farmers.

The quality of the vanilla does not only depend on crop husbandry but also on curing and grading. Curing determines whether the moisture content has been sufficiently reduced (preferably to less than 25 per cent), the vanillin content is high enough (preferably above 2 per cent) and the aroma is developing well. Grading determines the uniformity of a consignment (e.g. above 14 cm in length and without spots or scratches). This is important because each consignment has to sell itself. The buyer will inspect the moisture content, vanillin content and aroma before paying the exporter and before deciding on a subsequent order.

Extension officers can teach good husbandry relatively easily but proper curing and grading techniques are more difficult to pass on. It is therefore better to leave the curing and grading in the hands of professionals, namely the exporters. All the present

exporters are also processors. They know the requirements of potential buyers and have experience in high-quality processing in accordance with international standards. It would be very time-consuming to teach individual peasant farmers the same tricks. Vanilla that is not properly cured starts to rot and has to be thrown away. During the initial stages farmers might therefore not sell anything and will certainly receive lower prices. The curing process would not help them to access export markets. Individual peasants do not have the contacts needed to export, and have to rely on professional exporters whether curing their beans or not.

The situation is different in the case of farmers' associations. With a lot of help, they can develop relatively quickly into professional processors. Exporting could remain a problem as it requires experience to find and convince potential buyers, and capital is needed to finance the buying and processing (see below). In 1999, the Mukono Vanilla Spices and Horticultural Crops Co-operative Society tried its luck at traditional processing and the direct selling of part of its members' supplies to international buyers. However, it took time to find a willing buyer and to sell off the stock and member-farmers complained about delays in payments. The society may trade again in the future, but it cannot handle large quantities because of financial constraints. Its members demand prompt payment, but the society lacks its own financial means and banks do not like to give loans to cooperatives.

In recent years vanilla production has expanded to parts of Uganda that are a long way from the traditional production area in Mukono. As a result, existing processor-exporters face increasing transport costs in getting their green beans from their farms to the processing plants. The plants are too small to handle the increasing supplies and are located in densely populated areas where expansion is difficult. Thus, a decentralisation of processing activities is necessary.

Starting a new processing plant requires capital and is therefore more feasible for established processor-exporters than for newly-formed farmer cooperatives. But even for established exporters the decision to decentralise processing is a difficult one. Initially the supplied quantities in the upcoming production area may be too small to run the processing plant economically. But without a local processing plant, production may be constrained by high transport costs and never get beyond the initial stage. Thus, the

processor has to be prepared to bear the initial financial losses or else abandon new production areas.

Ugandan vanilla is not yet very well known among international buyers but this will change over time. Constant supplies of high-quality beans will enhance the country's reputation and a local code of conduct will help to speed up the process. The code can provide guidelines for production and processing (similar to those for flowers) and set grades for cured vanilla. Vanilla processors who want to export under the code have to follow the rules. As a result, international traders will know what to expect when buying first-grade Ugandan vanilla from them.

One of the determinants of first-grade vanilla is the vanillin content. At the moment vanillin content cannot be checked in Uganda, but the new commercial laboratory that has been established in Kansanga will be purchasing the necessary equipment to do so. If the vanillin content is measured in Uganda, exporters can no longer be cheated by international buyers downgrading the quality of received supplies.

The code of conduct can prohibit the use of agrochemicals in vanilla production. They are not normally used but guaranteed organic production will enhance the reputation of Ugandan vanilla.

Uganda's organic vanilla might also be certified to increase its market value but such certification is very costly because of the large number of smallholders growing the crop. The certification institute (e.g. SKAL from the Netherlands) would have to visit all vanilla farms and processors at least once a year, and soil and bean samples would have to be taken and analysed in an independent certified laboratory. The extra costs of the entire certification exercise might very well nullify the extra benefits of supplying certified organic vanilla. Certified production is therefore a long-term alternative rather than a short-term option. In the meantime, a code of conduct could be a first step.

Diversification of export destinations is important. Until 1994, all Ugandan vanilla was sold to importers in the United States. In 1995 Canada was added as an export destination and in 1997 the UK and Germany followed. However, most Ugandan vanilla is still destined for the USA, and within the USA to one buyer, namely McCormick.

In 1998, McCormick bought more than 90 per cent of Uganda's vanilla crop. This is not a problem as long as UVAN has a long-term contract to supply McCormick

and this contract is not terminated. However, if McCormick decides that it no longer needs Ugandan vanilla, producers in Uganda will be in serious trouble. One of the reasons why McCormick was interested in supplies from Uganda in the first place was that it wanted to break the Madagascar-based vanilla cartel. This cartel is no longer operational and McCormick can now buy Bourbon vanilla at a relatively low price. There is now, therefore, less reason to buy supplies from Uganda. Changes in international power relations in the global vanilla market have increased the risks of an unexpected termination of the contract between UVAN and McCormick.

To reduce the consequences of such an event, good buying relations with other vanilla buyers in the United States and Europe are important. Fortunately, UVAN has recently diversified into traditional curing, and no longer only sells to McCormick. For the time being, UVAN will remain Uganda's leading exporter because other exporters lack the financial means to operate on a similar scale. McCormick advances money to UVAN, and UVAN has established credibility with Ugandan commercial banks because of its solid reputation. It can therefore offer cash on delivery on an unprecedented scale. However, competition is increasing. Some big coffee exporters are also trying their luck at exporting vanilla and they also have credibility at the banks.

Expansion of the Ugandan vanilla sector requires a competitive export financing system. One of the present bottlenecks facing vanilla exporters concerns high financial costs. A processor-exporter has to pay vanilla farmers cash on delivery. After collecting the green beans he needs two to three months to cure them, and another two to three months to find a buyer (except for UVAN that sells on contract to McCormick). This means that the exporter requires capital for up to six months.

In 1998, interest rates on a short-term commercial loan were at least 20 per cent. Thus if a processor-exporter had to borrow money to finance his business, the gross margin on processing and exporting could equal the interest payments on the required short-term commercial loan (Table 6.4). The exporter also had collection and processing costs and his operation would, therefore, be running at a loss. In other words, high interest rates made it impossible to finance a business with a commercial loan. Processor-exporters had to rely on their own capital, which curtailed any expansion of their business and thus the selling opportunities of vanilla farmers.

Table 6.4. Calculation of gross margins and interest costs per kg of vanilla (USh)

Year	1998	2000
Farm-gate price per kg of green beans (A)	2,500	4,000
Export price (FOB Entebbe) per kg of cured beans*	18,000	52,500
Export price (FOB Entebbe) per kg of green beans (B)**	3000	8,750
Gross margin (B)-(A)	500	4,750
Interest on (A)***	500	800

* Export price 1998: US\$ 12; export price 2000 (provisional): US\$ 35;
exchange rate in both years US\$ 1 = USh 1,500

** 6 kg of green beans produce 1 kg of cured beans

*** Interest rate of 20% on short-term commercial loan

In 1998 Ugandan exporters had to work with an all-time-low export price (see Section 6.5). When the export price is higher the situation becomes different. On the basis of provisional farm-gate and export prices for the year 2000 it can be seen that the interest costs equal 17 per cent of the gross margin (Table 6.4). This is still high but considerably less than in 1998.

Commercial interest rates are determined by the national economic situation and are therefore beyond the control of actors in the vanilla sector. To be able to borrow money at a lower interest rate, an export financing scheme would be required.

As everywhere in the world, a strong sector benefits from a powerful interest group's support. The vanilla sector in Uganda is no exception and a strong interest group is important. The Uganda National Vanilla Association (UNVA) exists and its executive is committed but membership participation is still weak. The UNVA does not have a regulatory mandate but such a mandate would be difficult to enforce at the moment anyway. The association can, however, take the lead in the development of a code of conduct. Initially that code would be voluntary to association members, but at a certain point it could become compulsory for vanilla growers, processors and exporters who want to be members of the UNVA. Membership of the UNVA would then be a quality mark in its own right.

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7. Maize and beans

7.1. From a virtual monopoly to an imperfect liberalised market

Many people would characterise Uganda as a banana-eating country. However, maize and beans are also becoming increasingly popular as staple foods. The area under both maize and beans more or less doubled between 1987 and 1998 (Table 7.1). During the same period the area under bananas increased considerably less (by one fifth). In 1998, the area under maize and beans together equalled 80 per cent of the area under bananas (UBS, 1999).

Maize and beans can be grown in many parts of Uganda. The majority of producers are peasants, who cultivate for their own consumption and sell some of their crop to purchase other food items and pay school fees, hospital bills, etc. Hand hoes and sometimes oxen are used to break up the land. Virtually no chemicals are applied.

Maize and beans are also grown on institutional farms. Prison and army farms grown for own consumption and sales. In addition, a small number of progressive, commercial farmers deal in maize and beans. They have much larger plots than peasant farmers, are better educated, use tractors to cultivate the land, and sow hybrid seed instead of local varieties. They grow primarily to sell.

Constraints in maize and bean production are both socio-economic and environmental. They include soil erosion, lack of land (due to population pressure), crop disease and pests (due to lack of crop rotation), shortage of farm labour (due to urban

migration), high prices of farm inputs, inaccessibility of farms (due to poor feeder roads) and lack of reliable market outlets (ADC/IDEA, 1996).

From 1968 until 1988 the Produce Marketing Board (PMB) had an official monopoly on the buying and selling of maize and beans.⁶⁹ More precisely, it had monopoly powers to purchase, store, handle, grade, process, distribute, import and export maize and beans and disseminate market information. The PMB bought the commodities from purchasing agents including cooperative societies of producers, licensed traders and trading companies. These intermediaries collected the maize and beans in villages for transport to PMB regional stores. They were paid a commission on delivery and had to finance purchasing, packing and transportation themselves.

The PMB did not operate as planned (Kaase-Bwanga, 1994; Muwonge, 1997). The government announced minimum producer prices at which the PMB was supposed to buy produce from farmers to protect them from possible exploitation by marketing agents. Minimum producer prices became, however, the maximum prices that the PMB would pay and private traders responded to this by paying farmers less. After all, they were supposed to deliver to the PMB. The PMB lacked both a viable buying network and transport facilities to deal directly with peasant farmers. It did not have the capital to pay them either, and paid its agents with promissory notes.

Private traders wanting to bypass the PMB faced movement restrictions. They were allowed to carry only limited quantities of maize and beans between districts and from surplus to deficit regions. This did not stop them from trading but increased their transport costs. They could not use trucks that would have generated economies of scale, but had to rely on taxis and buses that charged high rates per bag. In spite of these high costs, the PMB still could not compete with them.

Informal petty trade was common within the country and across borders with neighbouring countries.⁷⁰ However, these unregistered exports of maize and beans did not threaten the export activities of the PMB. The board managed to export over 95 per cent of the limited amounts of produce it purchased. It lacked sufficient working capital

⁶⁹ In 1986 groundnut, sesame seed and soya beans were added to this list of crops monopolised by the PMB.

⁷⁰ Cross-border trade of maize and beans takes place between Uganda and all its neighbouring countries (FEWS, 1998).

to buy all the surplus produce available for export, thus putting pressure on prices on the domestic market, which in turn affected maize production.

In 1988 the trade monopoly of the PMB in the domestic market was abolished as part of Museveni's second stabilisation programme. In 1990 the PMB also lost its export monopoly as one of the measures of the first structural adjustment programme (Bigsten and Kayizzi-Mugerwa, 1999; Ochieng, 1997). The maize market was opened up to private traders, and all restrictions on the movement of produce were abolished. This improved the efficiency of the marketing system (Kaase-Bwanga, 1994; EPRC, 1997) and production started to increase under the liberalised system (Table 7.1).

The present marketing system consists of a number of parallel marketing chains. Producers sell their maize and beans at the nearest rural market to local consumers, institutions, purchasing agents and assembling traders. Alternatively, producers sell at the farm gate to assembling traders and purchasing agents. These rural middlemen have small stores for bulking and either bring the produce to urban centres themselves or sell at their stores to urban wholesalers with trucks. The urban wholesalers are the spill to the system. They transport produce, finance the trade, and store for off-season selling. They supply large urban millers, the World Food Programme, and inter-regional traders who carry produce to deficit districts and across national borders.

The liberalised marketing system is not perfect. Inefficiencies in transport, storage and post-harvest handling remain a problem. Production areas are not accessible during the rainy season due to poor roads. Losses are high because of inadequate and poor storage facilities at the farm level and in rural buying centres. The quality of produce tends to deteriorate at each marketing stage. Long marketing chains (with many intermediaries) widen the gap between farm-gate and consumer prices (ADC/IDEA, 1997).

Table 7.1. Maize and bean production in Uganda, 1981-1998

	Maize Area planted ('000 ha)	Production ('000 tonnes)	Beans Area planted ('000 ha)	Production ('000 tonnes)
1981	258	342	n.a.	n.a.
1982	260	393	n.a.	n.a.
1983	285	413	n.a.	n.a.
1984	295	340	n.a.	n.a.
1985	347	350	n.a.	n.a.
1986	298	320	n.a.	n.a.
1987	307	357	373	299
1988	345	440	445	338
1998	430	624	480	389
1990	401	602	495	396
1991	420	567	510	383
1992	438	657	536	402
1993	503	804	552	428
1994	563	850	574	378
1995	571	913	600	390
1996	584	759	615	234
1997	598	740	630	221
1998	616	924	645	387

Sources: 1981 to 1986: MFEP (1994); 1987 to 1998: UBS (1999).

7.2. Exports in times of regional disaster

Under the liberalised system, not only has the domestic trade of maize and beans increased but also the export trade. In the 1980s there was little formal export of maize and beans due to the financial constraints of the PMB. After the liberalisation of the export market in 1990 exports increased drastically (Table 7.2). By 1993, 160 tonnes of maize and 48 tonnes of beans were being exported, amounting to 32 per cent of the total annual production of maize, and 9 per cent of the total annual production of beans. The rise in exports was, however, largely circumstantial.

In the late 1980s and early 1990s the number of refugees in East Africa increased sharply. Initially, international relief agencies did not procure staple foods in Uganda because of its then overvalued exchange rate and the difficulties encountered in securing reliable supplies. In 1993 the situation changed. Kenya experienced a major drought, and had to import almost 6 million bags of maize. Large quantities were supplied from Uganda through both formal and informal channels. At the same time, the World Food Programme alone purchased 100,000 tons of commodities, mostly

maize and beans, in Uganda to feed Rwandan refugees (World Bank, 1996). Other relief agencies followed (e.g. ICRC).

Many chance-seeking traders jumped into the supply business. They tendered bids for supply contracts to relief agencies and upon approval, went out to procure the necessary crop. Some traders did not understand the tendering process and made low bids on the assumption that they could bargain the price upward after a tender was accepted. They ran into trouble when they discovered that this was impossible. The situation became worse when the Ugandan shilling appreciated in value by 18 per cent from USh 1,217 per US\$ to USh 1,003 per US\$ (MFPED, 1998). Many successful bidders were forced to choose between defaulting on their contracts or incurring large losses. Bankruptcies occurred, and membership of the Ugandan Grain Exporters' Association dwindled from twenty-five in 1993 to only six by mid-1994. The survivors were larger firms, with more secure financing, a diversified line, and a better crop procurement network (World Bank, 1996).

In the following years the situation in Rwanda settled down and some of the refugees went home. As a consequence, the World Food Programme reduced its purchases of Ugandan maize and beans but still remained the biggest exporter, accounting for close to 90 per cent of total maize and bean exports (ADC/IDEA, 1996).

By 1998, the quantities of maize and beans being exported equalled only one fifth and one eighth respectively of the quantities exported in the peak year of 1993 (Table 7.2). In the year 2000, a temporary increase in relief exports was at hand. Kenya was a willing buyer once more as the country experienced another severe drought.

In summary, Uganda's exports of maize and beans increased shortly after the liberalisation of the export market, but exports were largely circumstantial. The question therefore remains as to whether the country can be a structural exporter of maize and beans in the long term.

Table 7.2. Ugandan exports of maize and beans, 1981-1999

	Maize Quantity ('000 tonnes)	Value ('000 US\$)	Beans Quantity ('000 tonnes)	Value ('000 US\$)
1981	n.a.	29	n.a.	n.a.
1982	n.a.	0	n.a.	n.a.
1983	n.a.	0	n.a.	n.a.
1984	n.a.	17	n.a.	n.a.
1985	n.a.	0	n.a.	n.a.
1986	n.a.	15	n.a.	n.a.
1987	n.a.	0	n.a.	n.a.
1988	n.a.	0	n.a.	n.a.
1989	n.a.	0	n.a.	n.a.
1990	27	3,318	9	4,150
1991	33	4,188	14	4,274
1992	30	3,894	9	2,782
1993	160	23,319	48	12,580
1994	100	28,666	37	12,900
1995	86	23,054	39	16,147
1996	87	18,143	40	16,050
1997	53	15,063	28	11,875
1998	45	10,362	8	5,287
1999	23	5,291	16	8,754

Sources: 1981 to 1989: MFEP (1994); 1990 to 1997: UBS (1999); 1998 and 1999: MFPED (2000).

7.3. Long-term non-quantifiable export opportunities

From a world market point of view, Uganda does not have a competitive advantage in the production of maize and beans. In 1996, its Domestic Resource Cost (DRC) ratio for maize was 9.35 and for beans 1.46. For the year 2001, the DRCs are projected to stay well above 1, the ratio that would make Uganda competitive from a cost perspective (GOU, 1997).⁷¹

Uganda's competitive advantage in the regional market is less clear. In 1993, the country's production costs for smallholder maize were considerably lower per hectare than in Kenya, and slightly higher than in Tanzania (Table 7.3). Costs per kg were, however, clearly higher than in Tanzania and Kenya, and were in fact as high as production costs on large-scale farms in Kenya. Uganda's high costs per kg resulted

⁷¹ See Section 4.1 for an explanation of the DRC ratio.

from low yields. Future increases in yields may reduce average per kg production costs provided that inputs are used in an efficient and economical way.

Table 7.3. Costs of maize production in Uganda, Tanzania and Kenya, 1993 (US\$)

Total costs	Uganda smallholder	Tanzania smallholder	Kenya smallholder	large-scale
Per hectare	242	236	392	770
Per kilogram	0.12	0.05	0.08	0.12

Source: Gabre-Madhin (1999)

Note: Production costs include variable costs (inputs and labour) and fixed costs (machinery).

In 1997, the Ugandan government stated in its mid-term plan for the modernisation of agriculture that the country had a competitive advantage for maize in the regional market. The Domestic Resource Cost (DRC) ratio was estimated to be 0.58 in 1996 and was expected to remain below 0.60 in 2001 (GOU, 1997). The regional DRC ratio for beans was not mentioned.

Uganda's export opportunities in the region do not only depend on its competitiveness but also relate to the degree of food self-sufficiency of its neighbours. Between 1990 and 1997, Kenya, Tanzania, Rwanda and the Democratic Republic of Congo all showed negative per capita growth rates in food production (World Bank, 2000).⁷² If this trend continues, all of Uganda's neighbours will be willing buyers in the decade to come. It is, however, difficult to predict what will happen. Political (in)stability and changes in seed technology, production techniques, marketing conditions, population growth and the weather will all affect production, trade and consumption.

Let us look at Kenya in more detail. Kenya is a country with a long tradition in both maize imports and exports. Table 7.4 shows that these imports and exports succeed each other. The country may export over 100,000 tonnes one year, while importing over 400,000 tonnes the next year. Annual differences result largely from rainfall

⁷² Average annual per capita growth rates for Kenya: -2.3%; Tanzania: -3.6%; Rwanda: -0.9%; DRC: -2.8%.

fluctuations. When the rains do not come in time or are insufficient, less maize is produced and the country is more likely to import maize.

Table 7.4. Total (marketed) production, exports and imports of maize in Kenya ('000 MT)

Year	Total production	Marketed production	Exports	Imports
1975/76	1375.2	487.8	120.8	0.03
1976/77	1597.1	564.7	113.0	0
1977/78	1671.4	424.0	8.0	0
1978/79	1620.0	330.2	23.0	0
1979/80	1606.5	241.7	120.0	0
1980/81	1888.3	217.9	0	224.0
1981/82	2560.0	472.9	1.0	77.0
1982/83	2450.1	571.3	1.0	89.0
1983/84	2214.8	637.1	123.0	0
1984/85	1500.0	560.6	47.0	405.0
1985/86	2440.3	582.9	18.0	125.0
1986/87	2870.0	669.5	228.0	0.7
1987/88	2400.0	651.9	248.0	0
1988/89	3140.0	485.3	167.0	0
1989/90	3030.0	625.9	110.0	0.002
1990/91	2890.0	509.3	160.0	0
1991/92	2252.7	303.5	18.7	0
1992/93	2205.0	324.1	0.42	414.4
1993/94	1698.3	241.8	0.11	12.9
1994/95	2620.8	316.0	0.17	650.4
1995/96	2369.7	401.0	221.5	10.8

Source: Nyangito (1998b)

Kenya's maize production is not only related to climatic conditions but also to the political environment in the country. Policy constraints have led to a lack of suitable varieties, limited use of recommended production technologies, lack of and high costs of inputs, poor information flows from research stations to farmers, poor pricing and other marketing incentives, and limitations in infrastructure development (Nyangito, 1997). The latter two factors also explain why an increase in production not always results in an increase in marketed production (Table 7.4).

Production of maize in Kenya will probably increase in the future if the weather is favourable and agricultural policies are improved. The need for additional, imported maize does not only depend on these two factors but also on the growth of the Kenyan

population (high but declining), the rate of urbanisation (also high but declining) and the production of other staple crops.

In theory, substitution might solve deficit problems in maize. Unfortunately, wheat and rice production in Kenya is problematic. Production was more or less stagnant in the 1990s, and the country had to import over 50 per cent of the required supplies of both wheat and rice. Traditional food crops such as sweet potatoes, millet, sorghum, cassava and yams offer no alternative. In the 1990s, their production expanded in semi-arid areas, but decreased in high and medium potential areas of the country (Nyangito, 1998a). Moreover, Kenya's rising urban population prefers maize, wheat and rice to traditional food crops.

Researchers expect Kenya to have a structural deficit in maize for the coming decade, but are not able to predict how big this deficit will be and what will happen thereafter. The country's deficit creates opportunities for Uganda, which will have to compete with (subsidised) exports from the United States and the EU, but has the advantage of producing white maize. Consumers in Kenya and other East African countries believe that yellow maize, as is produced in the United States and the EU, is inferior. They prefer white maize.

Whether Uganda can indeed export to Kenya and to other countries in the region depends on the availability of a surplus for export. This surplus cannot be taken for granted. Between 1990 and 1997, Uganda had a negative per capita growth rate in food production. The decline in per capita food production was less dramatic than in Kenya, Tanzania and the Democratic Republic of Congo, but it was nonetheless a decline.⁷³

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⁷³ The average annual per capita growth rate was – 0.9%.

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8. Sesame seed

8.1. From traditional subsistence crop to non-traditional export crop

Sesame (*Sesamum indicum* L.) is one of the oldest cultivated plants in the world and is thought to originate from north-eastern Africa. It was already a cash crop in Babylon and Assyria over 4,000 years ago. It is not known when the crop was introduced in Uganda but people were growing sesame in the pre-colonial period prior to the arrival of the first European traders. Sesame became a cash crop after the introduction of taxes by the East African colonial administrators in the early part of the twentieth century (Middleton, 1962).

In the early 1960s, Uganda had some 100,000 hectares under sesame, producing 34,000 tonnes of seed annually. During the next two decades, the area under production fluctuated but did not structurally increase. By the time Museveni came to power the area under sesame had declined to 80,000 hectares. Annual production was still 34,000 tonnes due to somewhat higher yields (Table 8.1). In the 1990s, the production of sesame started to increase structurally as a result of an increase in acreage and by 1998 Uganda's production of sesame seeds was more than twice as high as in 1985.

Sesame is well suited to the northern half of Uganda in particular, as it is very drought-tolerant thanks in part to an extensive root system.⁷⁴ The crop was, and still is, to a large extent a subsistence crop. Nowadays, approximately 40 per cent of the sesame seed produced in Uganda is consumed on the farm. Most of the marketed sesame seed is sold through rural markets where collecting traders come to buy. They take the product to urban wholesalers who in turn either sell it to urban retailers or export it. Producers bring small quantities to urban markets themselves (Bibagambah, 1996).

Table 8.1. Sesame seed production and yields in Uganda

	Area harvested (Ha)	Yield (Kg/Ha)	Production (MT)
1961	109,000	312	34,000
1965	95,000	316	30,000
1970	66,000	258	17,000
1975	122,800	318	39,100
1980	65,000	309	20,000
1985	76,000	434	33,000
1986	80,444	430	34,614
1987	74,000	446	33,000
1988	81,000	444	36,000
1989	92,000	498	45,800
1990	124,000	499	61,830
1991	130,000	469	61,000
1992	143,000	504	72,000
1993	150,000	500	75,000
1994	158,000	443	70,000
1995	166,000	428	71,000
1996	172,000	424	73,000
1997	172,000	424	73,000
1998	179,000	430	77,000

Source: FAOSTAT

Throughout the 1980s Uganda's exports of sesame seed remained negligible (Table 8.2). The export trade was monopolised by the Produce Marketing Board, which never played an active role as buyer. It intended to buy what was offered to it, lacked facilities in rural areas to buy effectively, and lacked competitive power (Bibagambah,

⁷⁴ Sesame requires adequate moisture for germination and early growth, and a minimum rainfall of 500 to 625 mm per season for reasonable yields. Moisture levels before planting and flowering have the greatest impact on yield. The crop cannot tolerate water logging. Rainfall late in the season prolongs growth and increases shattering losses. Wind can cause shattering at harvest.

1996). In the early 1990s the export trade was liberalised, private traders came in, and exports boomed. A few years later the short-term boom was over and most of the exporters had shifted to other crops or activities. The export opportunities appeared to have been circumstantial as is explained below.

Table 8.2. Sesame seed exports by Uganda and Sudan

	Ugandan exports			Sudanese exports		
	Quantity (MT)	FOB Value ('000 US\$)	Value/MT (US\$)	Quantity (MT)	FOB Value ('000 US\$)	Value/MT (US\$)
1981	n.a.	0		65,199	42,938	659
1982	n.a.	0		60,766	40,664	669
1983	n.a.	76		48,720	43,488	893
1984	n.a.	69		80,820	73,909	914
1985	n.a.	0		47,600	42,748	898
1986	n.a.	0		29,051	23,542	810
1987	n.a.	16		60,587	48,000	792
1988	n.a.	76		98,874	59,723	604
1989	n.a.	759		70,231	73,993	1054
1990	9,207	5,234	568	52,500	58,000	1105
1991	17,805	10,517	591	37,000	40,500	1095
1992	12,863	6,478	504	51,000	44,500	873
1993	8,372	2,776	332	125,750	68,200	542
1994	4,142	1,548	374	130,543	66,742	511
1995	9,314	5,899	633	97,395	80,449	826
1996	11,462	9,563	834	157,405	141,132	897
1997	3,100	1,900	613	171,826	117,312	683
1998	37	11	297	102,000	51,000	500

Sources: Uganda 1981-1990: MFEP (1993), Uganda 1991-1996: UBS (1999); Uganda 1997: FAOSTAT; Uganda 1998: MFPED (2000); Sudan: FAOSTAT

8.2. The world market for sesame seed

China is the world's largest producer of sesame seed (1998: 656,400 tons) followed by India (555,400 tons) and Sudan (262,000 tons). Other major producers are Nigeria (66,000 tons), Ethiopia (55,000 tons), Mexico (31,700 tons), Venezuela (23,500 tons) and Turkey (26,000 tons) (FAOSTAT). With its 77,000 tons in 1998, Uganda is a big producer of the second rank.

The world market for sesame seed is divided into three sectors (Robbins, 1995). The first is the US market that is dominated by the trade in high-quality Central American seed. This seed can fetch three or four times the price of unhulled seed from

the Far East and the Middle East. Investments in control systems and sorting are required to compete in this market. Some of the seed is grown according to the specifications of the international hamburger chains which take a direct interest in seed production.

The second section of the world market concerns Japanese importing companies and Chinese exporting enterprises. They form a natural partnership and trade directly with each other. Some Japanese requirements remain unsatisfied by China, and other producing countries, including some African ones, supply limited quantities to the Japanese market.

The third section of the world market relates to Middle Eastern and European demands. Middle Eastern demand is only partially satisfied by local production and further supplies are imported, especially from African suppliers. European traders also buy from Africa and from all over the world.

Uganda's major trading partners in Europe are the United Kingdom, the Netherlands and Switzerland. The most important buyers of Ugandan sesame seed in the Middle East are the United Arab Emirates, Israel and Egypt. In the Far East, Japan, Hong Kong and Singapore buy Ugandan seed, and in Sub-Saharan Africa importers include Kenya and South Africa (internal files UEPB).

The world market is very volatile. Sesame prices can increase or decrease by over 50 per cent from one year to the next. The price for sesame of mixed origin was, for instance, US\$ 500 per tonne in 1994 and US\$ 790 in 1995 (CIF Europe) (Robbins, 1995). There is little that individual countries like Uganda can do about these price fluctuations.

8.3. Uganda's position in the world market

Uganda is a market follower, or more precisely a Sudan follower when it comes to sesame seeds. In the early 1990s, Uganda experienced a sesame boom due to a serious drought in 1990/91 in Sudan. The drought, combined with an overvaluation of the Sudanese currency and the political and economic isolation of the country because of its stance during the Gulf War, created a shortfall on the international sesame seed market. This offered opportunities for Uganda. Between 1990 and 1992, the price of

Ugandan sesame seed doubled to nearly US\$ 700 per ton (FOB Mombasa). This stimulated a big increase in sesame planting and led to the increased commercialisation of what had been largely a subsistence and locally-traded crop (World Bank, 1996).

During the boom years, policy makers suggested that sesame seed could become a leading export crop alongside coffee. This confidence led traders to continue paying farmers high prices in 1993 despite the fact that Sudan was returning to the market. The 1993 Sudanese crop turned out to be a record crop, which reduced international prices, and drove down export prices for the less-favoured Ugandan commodity by 50 per cent (Table 8.2). This, together with the appreciation of the Ugandan shilling, resulted in substantial losses for sesame seed traders, with many going out of business (World Bank, 1996).

In subsequent years export prices of Ugandan sesame seed have continued to fluctuate substantially, as have export prices of Sudanese sesame seeds. The Ugandan price has always remained below the Sudanese price (Table 8.2). International traders favour Sudanese sesame seed and will only buy Ugandan seed when they cannot get Sudanese seed or when they can pay less than for Sudanese seed. Sudanese seed is superior in quality to Ugandan seed and Uganda, as a market follower, can only hope for poor harvests in Sudan.

8.4. The buying stage: an oligopolistic situation

In 1996, world market prices boomed once more. The average Ugandan export value per tonne was around US\$ 800, which equaled USh 800 per kg. At that time Ugandan farmers usually received USh 200 per kg. This meant that the gross trade margin was three times as high as the farm-gate price. There were numerous reasons for this. The first concerns the costs of collection, domestic transport and storage. There are also the generally high, calculated trade risks of the trader. Export prices may go down after the trader has bought the sesame seed from the farmers. Some purchasing agents, often young men with bicycles, disappear with the money they get from the trader to buy produce. Some of the sesame seed may go bad in the store because of floods. The trader may not be able to get his activities pre-financed by a Ugandan bank or only at high interest rate. The (opportunity) costs are high.

One final factor determines the gap between farm-gate and export prices: the level of competition between exporters. According to the 1998/99 Uganda Export Directory, there are sixteen exporters interested in sesame seed (UEPB, 98/99). However, most of these traders only deal with the commodity in small quantities or irregularly. Two traders dominate sesame seed exports: a minister and a relative of the President. In 1996, they were responsible for over three-quarters of all exports and they set the price by offering farmers US\$ 200. However, one of the smaller exporters calculated that a farm-gate price of US\$ 450 was also economically feasible. Thus, the oligopolistic buying situation with two main buyers has negatively affected farmers' revenues.

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